



**INTERCOUNTY CONNECTOR  
I-270 TO US 1**

**ALTERNATIVES RETAINED  
FOR DETAILED STUDY  
(ARDS)**

**Maryland State Highway Administration**

**Federal Highway Administration**



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## **I. INTRODUCTION**

The Intercounty Connector (ICC) is a proposed multi-modal east-west highway to link existing and planned development areas between the I-270 and I-95/US 1 corridors within Montgomery and Prince George's counties. The ICC has been the subject of several studies over the last five decades. In the 1950s, an outer circumferential freeway (Outer Beltway) was first proposed by the National Capital Planning Commission for the Washington, D.C. area. However, in 1968, the Outer Beltway was dropped from the plan, but the ICC link between I-270 and US 1 was retained. In 1979, the Maryland State Highway Administration (SHA) initiated the first of three project planning studies for the ICC. The first two studies resulted in Draft Environmental Impact Statements and public hearings (in 1983 and 1997); however, no final decisions were made in either study.

In June 2003, SHA initiated planning efforts on the ICC study with an Interagency Workshop at the University of Maryland. The ICC study is being conducted with the Maryland Department of Transportation's (MDOT) State Highway Administration (SHA) as the lead State agency and the Federal Highway Administration (FHWA) as the lead Federal agency.

The ICC Study Area is located in Montgomery and Prince George's Counties, north of Washington, D.C., extending from I-270 to I-95/US 1, and from the Capital Beltway to the Patuxent River. The Study Area encompasses an area of mixed land use with heavy concentrations of existing and planned employment along the I-270 and I-95/US 1 corridors, dense residential development in the southern section and some areas of lower density development in the northern section. There are several major stream valley parks in the Study Area.

The Study Area lies between Washington and Baltimore. The Baltimore/Washington Metropolitan area has experienced considerable growth in households and employment in recent years. I-95/US 1 and I-270 are two of the most intensive employment, residential and transportation corridors in the State of Maryland. The I-270 corridor is an important location for high technology, extending from the Capital Beltway (I-495) through Clarksburg. Montgomery County areas along the I-270 corridor include North Bethesda, Rockville, Gaithersburg, Germantown and Clarksburg. Prince George's County areas along the I-95/US 1 corridor include Laurel and Beltsville.

All study efforts are being conducted in compliance with the National Environmental Policy Act of 1969 (NEPA i.e., 42 U.S.C 4321-4347), which requires that any project receiving Federal funds or requiring other Federal action undergo an evaluation of reasonable alternatives and an analysis of potential impacts. NEPA establishes a national policy of preserving and enhancing the environment while seeking to achieve a balance between population and resource use. It is under the NEPA umbrella that the socioeconomic, natural and cultural, environmental impacts and concerns are addressed. This study will also be used for the alternatives review for the Section 404 permit (Section 404 [33 U.S.C. 1344] of the Clean Water Act [33 U.S.C. 1251-1387]). The U.S. Environmental Protection Agency (EPA) and the U.S. Army Corps of Engineers (ACOE) administer the Clean Water Act. The ACOE regulates discharges of dredged or fill material into waters of the United States, including wetlands. Since 1972, the ACOE has

regulated these discharges following the Section 404(b)(1) Guidelines of the Clean Water Act, Specification of Disposal Sites for Dredged or Fill Material (40 C.F.R. 230). These discharges require permits from the ACOE.

In 2002, President George W. Bush issued Executive Order 13274, “Environmental Stewardship and Transportation Infrastructure Project Reviews,” which included the formation of a Federal Transportation Infrastructure Streamlining Task Force to monitor progress of priority projects selected for environmental reviews and to examine policy issues that promote efficient interagency coordination and improved environmental decision making. The US Secretary of Transportation designated the Intercounty Connector project as one of 13 transportation priority projects being monitored by the Federal Task Force. Environmental streamlining requires agencies to conduct concurrent rather than sequential reviews, adhere to their deadlines, and engage in a dispute resolution process to avoid unnecessary delays. Streamlining does not change the environmental protections that must be considered during the process. As an environmental streamlining priority project, the ICC receives close Federal and State oversight.

## **II. PURPOSE AND NEED STATEMENT**

### **A. Project Purpose**

The proposed Intercounty Connector (ICC) project is intended to link existing and proposed development areas between the I-270 and I-95/US 1 corridors within central and eastern Montgomery County and northwestern Prince George's County with a state-of-the-art, multi-modal, east-west highway that limits access and accommodates passenger and goods movement. This transportation project is intended to increase community mobility and safety; to facilitate the movement of goods and people to and from economic centers; to provide cost-effective transportation infrastructure to serve existing and future development patterns reflecting local land use planning objectives; to help restore the natural, human and cultural environments from past development impacts in the project area; and to advance homeland security.

### **B. Project Needs**

#### **Community Mobility and Safety**

Mobility in the developed portions of Montgomery and northwestern Prince George's Counties is severely limited, in part because there is no continuous high capacity transportation facility. This lack of mobility limits job opportunities, interaction between communities, access to government and community services, and contributes to a decrease in the quality of life. The Study Area has developed without a regional east-west highway, as planned. The lack of such a highway severely limits mobility but also creates safety hazards in and among the developed portions of Montgomery and northwestern Prince George's Counties. The development that has occurred in the region has resulted in significant east-west travel, but absent an ICC, the local road system must accommodate extremely high volumes of traffic. This overloads local roads resulting in clogged intersections, longer travel times, and limited access for local residents from their driveways and smaller side streets. There are numerous accidents of all types and severity due to local, longer-distance and service vehicles mixing with bicycles and pedestrians. The number of potential conflicts due to the numerous driveways, side streets and other access points contributes to the unsafe condition on the local road network.

#### **Movement of Goods and People To and From Economic Centers**

An east-west highway north of the Capital Beltway is needed to support the continued attraction and retention of businesses and employment opportunities in the region. The extensive economic development areas include the I-270 High Technology Corridor, the Baltimore-Washington International (BWI) Airport development area, and the I-95/US 1 corridor. New highway capacity that is efficient and reliable is necessary to accommodate passenger and freight travel, moving people, goods and services throughout the region. Growing congestion in the area today increases costs of doing business, in part because of longer travel times and unreliability to the detriment of the health of the economy.

## **Local Land Use**

Montgomery County and northwestern Prince George's County have developed as planned with intense development in jobs and households along the I-270, I-95/US 1 and I-495 corridors. An east-west regional highway facility has long been a part of local land use planning in order to support the region's orderly growth and development patterns. The foundation for Montgomery and Prince George's Counties' general plans (and updates) for the last forty years has been the "On Wedges and Corridors" land use concept, which channels growth into development corridors radiating from or ringing the District of Columbia while preserving wedges of open space, farmland, and lower density residential areas. This overall planning concept is periodically updated in a public process that gives due consideration to sustainability, land preservation, development density and environmental sensitivity. Local officials have carefully executed these progressive land use concepts. Many land use and environmental stewardship principles of Maryland's more recent "smart growth" policies are based on the concepts of the "On Wedges and Corridors" plan.

The population of Montgomery County has grown from approximately 370,000 in 1962 to 910,000 in 2002. In Prince George's County, the population has grown from 418,000 to 833,000 over the same period. Nearly 80 percent of the planned development in the project area has been built. The 103-mile Metro line, the Montgomery County "Ride On" and the Prince George's County "The Bus" transit systems were built and created as planned. Furthermore, other alternative transportation projects and strategies have been completed or are currently underway. The existing roadways are primarily oriented in a radial fashion, with limited options for east-west travel between these major radial corridors.

## **Environmental Stewardship**

The planned development that has occurred has created certain stresses on the Study Area's environments, including the rich natural resources associated with the north-south oriented stream valleys and their parks. Alternatives for the new east-west highway will be developed in an environmentally sensitive manner using state of the art measures to avoid, minimize and mitigate impacts. Further, the alternatives will include appropriate environmental restoration and enhancements. The land use plans in Montgomery and Prince George's Counties highly value environmental stewardship and resource protection. These plans allocate certain areas to private and public development and to preservation and open space. The ICC is a major public works project in an already highly developed area, and as such, it needs to be located and designed with full consideration of the current and future condition of important environmental resources in the Study Area. The alternatives will incorporate restoration and enhancement features to help bring about improvements to natural, cultural and human environmental conditions, including but not limited to those that exist today because of past development in the area.

## **Homeland Security**

A new east-west highway will provide much-needed system capacity for military access, population evacuation, and emergency vehicle access in and around the National Capital. With regular congestion on the Capital Beltway, made worse by accidents or other incidents, the region needs a reliable alternate east-west route for emergency response situations. Additional

east-west multimodal highway capacity north of the Capital Beltway would provide a grid of high capacity transportation needed in the event of an emergency or sudden need for access. The Washington metropolitan area is home to many government, military and community installations with unique Homeland Security concerns and responsibilities. These agencies depend on a clear and expeditious access and evacuation route being always available. On September 11, 2001, it became clear that this region does not contain sufficient highway capacity to accommodate citywide and metro area evacuation, and subsequent emergency planning has underscored the need for an ICC between the interstate corridors north of the Beltway.

### **C. Concurrency on Purpose and Need**

The SHA and FHWA requested and received concurrence on Purpose and Need from the ACOE and the Maryland Department of the Environment (MDE).



### **III. ALTERNATIVES SCREENING**

#### **A. Public and Agency Scoping Meeting Summary**

The Alternatives Screening process begins with scoping, the first phase of a planning study. Scoping is an iterative process that continues throughout the study and includes continued environmental data collection and engaging project stakeholders in the development of ideas on how to resolve the project needs.

The scoping process began with an Interagency Workshop at the University of Maryland on June 11, 2003, where more than 100 representatives from 28 local, state and federal agencies gathered to discuss study efforts. In addition, Scoping Public Open Houses were held in June and September 2003 in Montgomery and Prince George's counties that were attended by nearly 800 people. Materials available at the Open Houses were also made available on the project website ([www.iccstudy.org](http://www.iccstudy.org)).

The Study Team evaluated the suggestions and alternatives received from the public and regulatory agencies, as well as those generated from previous studies. The goal of this process was to develop alternatives that would encompass all of the suggestions that could reasonably be expected to address the project's Purpose and Need. A primary resource for evaluating these preliminary alternatives was the ICC Purpose and Need Statement.

#### **B. Suggested Alternatives**

Alternatives were suggested throughout the scoping of the current ICC Study or as part of past studies. The Study Team considered all of these suggestions and considered new alternatives recommended during the public and agency scoping. All of the suggested alternatives received equal consideration. The following 17 alternatives were considered:

- Midcounty Highway-Maryland 198 (MM198) Alternative
- Upgrade Existing Roads Alternative
- Transit-Only Alternative
- Howard County Connection alternatives
- Balanced Land Use Alternative
- Combined Land Use and Transit Alternative
- M-NCPPC Board and Staff Hybrid Alternatives
- Improve I-495
- An Auto-Train Route
- Extend ICC west of I-270 and/or east of US 1
- Construct a roadway from I-270/Falls Road to the Master Plan Alternative at MD 97 in lieu of building Master Plan Alignment between I-370 and MD 97
- Move the ICC south of all other alternatives
- Build I-95 to continue through the District of Columbia
- Transportation Systems Management/Travel Demand Management (TSM/TDM) Alternative

- Construct Two Separate East and West Highway Links
- Corridor 1 (similar to the Master Plan Alternative, as identified in previous studies)
- Corridor 2 (similar to the Northern Alternative, as identified in previous studies).

Seven of the suggested alternatives warranted detailed discussion of their ability to meet a portion or all of the purpose and need. These seven alternatives, the Midcounty Highway-Maryland 198 (MM198) Alternative, the Upgrade Existing Roads Alternative, a Transit-Only Alternative, Howard County Connection Alternatives, a Balanced Land Use Alternative, a Combined Land Use and Transit Alternative, and M-NCPPC Board and Staff Hybrid Alternatives, are discussed below.

Following these detailed discussions is an Alternatives Screening Matrix that was the basis of a handout at the Alternatives Public Workshop for public input and summarizes the 17 suggested alternatives and their ability to address the project's Purpose and Need as described in the previous section (please note that the "construct two separate east and west highway links" suggestion was added based on agency input after the public workshop). Of the five elements of Purpose and Need, *Community Mobility and Safety* and *Movement of Goods and People to and from Economic Centers* were the most important to this screening process.

As discussed below, SHA's thinking prior to the Alternatives Public Workshop was that the following alternatives did not substantively meet a portion or all of the established Purpose and Need.

## **1. Midcounty Highway-Maryland 198 (MM 198) Alternative**

As suggested in the previous ICC study and during the scoping process of the current study, MM 198 would be a six-lane urban arterial extending from the Midcounty Highway/Shady Grove Road intersection to MD 198 at Van Dusen Road east of I-95. It would be an arterial with partial control of access (i.e., no driveways or entrances). In general, arterials cannot offer the same traffic capacity, specifically at intersections, as fully access controlled highways serving the same volumes. As suggested, the MM 198 alternative would have the following features:

- A 50 mph design speed (compared to a 60 mph design speed for an access-controlled highway)
- Two 38-foot wide roadways and no shoulders
- 20 at-grade intersections and only two interchanges
- No connection to I-270 and no new connection to I-95.

As reflected in the ICC's Purpose and Need, providing an access-controlled highway is critical to facilitating the delicate balance of environmental and community sensitivity, transportation needs, and safety and security, but a new arterial roadway would significantly diminish the integrity of the proposed project and would not meet the project's needs.

*Community Mobility and Safety* and *the Movement of Goods and People to and from Economic Centers* – In the previous studies of the ICC, arterial alternatives were considered to various levels of detail to evaluate their potential for lower impacts and costs and operational benefits.

The studies showed that with intersections instead of interchanges, arterial roadways would not function at an acceptable level-of-service. In the 1997 DEIS (Fig. II-16) the Study Team found that of the 20 intersections (with traffic signals) included with the MM 198 Alternative, 12 operated at or over capacity (LOS E/F), and in some cases more than 25% over capacity by the design year 2020. Those studies showed that unless the intersections along MM 198 were very large (requiring very large amounts of right-of-way, in some cases as much, if not more, than an interchange), a LOS D or better could not be attained at most of the intersections. For example, in order to operate at LOS E as an at-grade intersection, the MM198/Shady Grove Road intersection would require a jug-handle ramp in the northwest quadrant and 10-14 lanes on each leg of the intersection, necessitating more ROW acquisition than would an interchange.

The two major development corridors in the Study Area are I-270 and I-95. MM 198 would not connect directly to I-270 and would provide no new access to I-95, critical components to meeting the needs of the Study Area. The importance of the direct connection to I-270 is demonstrated by the estimate from the 1990s study that nearly half the traffic on the Master Plan Alternative west of MD 97 was destined to or coming from I-270. With MM 198, these motorists would need to travel heavily congested roads such as Shady Grove Road to access I-270. For example, using Shady Grove Road and I-370 to access I-270, motorists would pass through three signalized intersections, one of which, Midcounty Highway/Shady Grove Road, is expected to operate 50% over capacity in 2020 for the no-build condition. Likewise, with its utilization of the existing MD 198 interchange rather than a new connection to I-95, MM 198 does not enhance access to and from I-95. With MM 198, these motorists would utilize the existing MM 198 interchange or other routes, which are heavily congested. Preliminary travel forecasts for this study indicate similar trends. This congestion would adversely affect both the movement of goods and people as they travel to and from economic centers within the Study Area. In addition, the City of Laurel has expressed concerns that with upgrades to MD 198, the MM 198 Alternative may encourage motorists who are destined for MD 32 and points east to continue through Laurel on the already-congested MD 198, which is not able to accommodate increased traffic volumes.

Improvements in safety remain one of the stalwart needs in the ICC Study Area. For each four-way access point along an arterial roadway, there are up to 32 different conflict points and thus an equal number of opportunities for a traffic accident to occur. Further, arterial roadways (i.e., divided highways with partial control) with intersections typically experience accident rates and fatal accidents at a much higher rate than access-controlled facilities. The 1997 DEIS (Table VI-14) estimated that an access-controlled alignment was likely to result in approximately 500 fewer accidents per year than an arterial roadway serving similar volumes of traffic. Even with design features such as left turn storage lanes, acceleration and deceleration lanes, and exclusive signal phases, the conflict points still exist.

In addition, with a fully access controlled highway (freeway), the existing arterials in the Study Area would be utilized by local traffic and the freeways by longer distance trips (previous studies found that 25 percent of trips have an origin and destination outside of the Study Area, indicating that a significant number of regional travelers could use this route). This separation of local and through-traffic would result in a reduction of traffic conflicts. For the MM 198 alternative, however, existing local roads, such as Norbeck Road from Barn Ridge Road to Good Hope Road

and MD 198 from Riding Stable Road to I-95 would become part of the ICC, meaning that local and through traffic would share the same facility, leading to a higher potential for traffic conflicts. This would be especially problematic for the residents of Norbeck Knolls and Oak Hill Road communities, and the residents of West Laurel, for example, who would have to contend with heavy trucks, high-speed regional traffic, and rush hour commuters when they want to make local trips (i.e., to the grocery store, school, etc.).

One suggestion for addressing the separation of local and through-traffic was the use of service roads. MM 198 was considered as a six-lane divided roadway in a nominal 134-foot right-of-way. Therefore, adding service roads would increase the overall number of lanes from six to ten (a two-lane road on each side of MM198), thereby increasing the footprint, impacts (e.g., residential displacements, wetlands, parkland, and historic sites) and the cost of MM 198. Numerous bridges over MM 198 would be needed to maintain local connectivity, and traffic operational problems would result at the major crossroads (e.g., MD 182, MD 650) in trying to connect both the service roads and MM198 to the crossroads.

The potential demand for traveling across all or a portion of the Study Area is significant. Forecasts indicate that unmanaged demand for some segments of the ICC will approach 150,000 vehicles per day by 2030. In an effort to provide a reasonably sized multimodal highway to serve this demand, alternatives to help manage use of the facility will be analyzed. Examples of service management include tolls and lane restrictions. Applying these strategies along an arterial roadway with multiple intermediate points of access between intersections becomes nearly impossible because of the inability to enforce the restrictions or to collect tolls. Although it would be technically feasible to collect tolls on an arterial roadway with no points of access between intersections, it would be extremely unusual and impractical to impose a toll on any facility that provides a lower measure of service than a freeway. In addition, the residents of Barn Ridge Road, Whitehaven Road, and Oak Hill Road, who would have no egress from their neighborhoods other than via MM 198, would be subject to tolls every time they left their neighborhoods.

*Local Land Use* – An arterial roadway provides differing economic growth and development pressures and likely development outcomes than does an access-controlled highway. As an example and as summarized in the 1997 DEIS P. IV-50, the MM198 Alternative would not by itself support extensive economic growth outside of a corridor surrounding the new arterial because it would not reduce travel time and provide the larger capacity provided by an access controlled roadway. Instead, Montgomery County would likely see tremendous pressures for rezoning for strip development and more intense commercial development within a one-half to one-mile radius of the intersections (nodes) because of easier localized access as compared to a fully access controlled highway. This type of sporadic commercial development is not planned by local planners for most of the northern areas of Montgomery County and would further increase the potential for conflicts between local and regional traffic. In addition, the heavy volumes of traffic that would be drawn to the side streets of every intersection along the arterial would be in direct conflict with the residential nature of these streets. An arterial roadway such as MM 198 would tend to transform the character of a community of a medium-density nature to a more urban nature, even more than would a facility that limits access via a select number of major intersecting highways.

*Homeland Security* – Since the events of September 11<sup>th</sup>, awareness and importance of the needs of our national security have risen. There are numerous government installations, facilities and services in and around the Study Area. The Department of Transportation has identified a need to increase mobility in this area and to create additional routes to assist in the area evacuation. In addition, during an emergency, the provision of emergency vehicle response becomes critical, particularly as it relates to getting prompt medical attention at area hospitals (there are three major hospitals in the Study Area – Shady Grove Adventist, Montgomery General, and Laurel Regional), and or for biological, chemical, or nuclear response teams. An arterial with numerous access points and traffic signals is more difficult to manage and would move more slowly than an accessed controlled highway. On the contrary, a new east-west access controlled facility would greatly reduce the time required to get injured people to area hospitals in the event of a major terrorist incident. The time it would take to traverse the Study Area on an access-controlled highway is considerably less than on an arterial roadway, thus improving the response time of trained professionals who will have to deal with a crisis.

*Incorporating features of MM 198 into the Build Alternatives* – Through comprehensive discussions among representatives from State and local agencies, the Study Team will incorporate many of the features of the original MM 198 Alternative into the Build Alternatives, including reducing the footprints of all alternatives to minimize environmental impacts. In addition, portions of the MM 198 Alternative are being included as alignment options as part of Corridor 2. Overall, features of Corridor 1 and Corridor 2 will include a narrower median where possible to reduce the width of the typical section, a lower profile where possible to reduce the visibility of the ICC to neighboring communities, a bifurcated profile in combination with retaining walls, and reduced grading beyond the outside shoulder.

In summary, if MM198 were modified to incorporate the design features that are felt to be essential to meeting the project's purpose and need (e.g., direct connection to I-270; full control of access; additional interchange capacity at I-95), it would be nearly identical to Corridor 2. Furthermore, Corridor 2 has incorporated the more environmentally sensitive features of MM198 (e.g., narrower footprint; lower profile near communities).

## **2. Upgrade Existing Roads Alternative**

The 1997 ICC DEIS included an Upgrade Existing Roads Alternative (UERA) that called for widening approximately 34 miles of east-west and north-south roadways to or beyond the number of lanes specified in the counties' master plans, as well as the improvement of 26 major intersections. The improved roadways included MD 355, MD 115, MD 28, MD 198, Norwood Road, Briggs Chaney Road, Fairland Road, Cherry Hill Road, Old Gunpowder Road, and Contee Road.

The UERA can be evaluated much like the arterials discussed previously. In terms of *Community Mobility and Safety*, the UERA places more traffic on local roads and arterials that, even with the improvements, would remain heavily congested. The counties' master plans stipulate the number of lanes on each roadway. The number of lanes was developed through the master planning process, which includes technical analysis and a public involvement process that considers land

use, environmental resources and transportation needs. Increasing the number of lanes beyond that already planned would, in most cases, be extremely costly. Many of the roads in the Study Area are lined with land uses that were developed along a road of a known width. Widening these roads would, in many cases, impact these developments, which would result in property and environmental impacts. Furthermore, motorists, still subject to the frequent signalized intersections, entrances and driveways, would not experience the improved mobility and safety than they would with a controlled access highway.

The 1997 DEIS analysis of the transportation implications of the UERA showed that travel time during peak periods in 2020 between Laurel and Gaithersburg would be 109 minutes for transit trips with the UERA compared to 58 minutes with the Master Plan Alternative (MPA) and 72 minutes with the Northern Alternative (NA); auto trips would be 61 minutes with the UERA and 38 minutes with the MPA or NA. Traffic engineers, currently developing updated forecasts, expect little change in these trends.

In addition, according to previous traffic studies, approximately 75 percent of the motorists that would use a new alignment ICC have either an origin, a destination, or both an origin and a destination outside the Study Area. With the UERA, these long-distance trips would need to be made on a variety of different collectors and arterials. This would result in those travelers outside of the Study Area mixing with the more local traffic these roads are intended to serve. Motorists desiring to travel east west would be required to travel through the network on a series of north-south arterials to reach the east-west travel corridors. These disjointed trips would be longer than a direct link, in terms of distance traveled and time spent in traffic congestion.

As with the safety concerns cited with an arterial alternative, motorists on the UERA would experience substantially more accidents on the arterial routes that comprise the UERA than they would on a controlled access highway.

Many of the roadways identified as part of this alternative are lined with existing residences and established businesses that would be severely impacted or displaced by adding lanes to increase capacity. The previous analysis of the UERA in the 1997 DEIS resulted in 139 displaced residences and 35 business displacements. The next highest number of residential displacements of the alternatives studied was 53 associated with the Northern Alternative.

In terms of *Homeland Security*, the time it would take to traverse the Study Area on an access-controlled highway is considerably less than on an arterial roadway like MD 355 or MD 28 (as shown above and in the discussion of MM 198).

### **3. Transit-Only Alternative**

A Transit-Only Alternative was evaluated in the 1997 DEIS and more recently was suggested as part of the current study. A Transit-Only Alternative would consist of options that only include transit systems such as a new light rail or commuter rail system on a dedicated transit way to connect origins and destinations in the I-270 and I-95 corridors. No new roadways or improvements to existing roadways associated with a new transitway would be included in this alternative.

In terms of *Movement of Goods and People To and From Economic Centers*, transit service, particularly circumferential transit service as would be the case for transit in lieu of an ICC highway, is generally difficult to provide and sustain in outer suburbs. The radial I-270, US 29, and I-95 corridors promote bundled travel patterns along each corridor, but dispersed patterns between corridors. A trip between any two of these radial corridors may be from the inner end of one corridor to the outer end of the other, or any other imaginable combination. Moreover, the wedges between radial corridors are planned for lower density and thus would not promote concentration of travel plans. Thus, both the residential end and the workplace (or other non-home) end of the trip would be in a lower density environment, which is not conducive to effective transit service. Moreover, part of the purpose of the ICC is to move not only people but also goods, which cannot be done efficiently with transit.

This was demonstrated by detailed modeling studies conducted as part of the 1990s ICC study, in which three light rail transit alternatives were evaluated: (1) the Master Plan Transit Alternative along the ICC master plan corridor, connecting the Shady Grove METRO Station with the Muirkirk MARC and Greenbelt METRO/MARC stations; (2) the Randolph Road Transitway, which generally followed MD 355, Randolph Road, Fairland Road, and the ICC Master Plan alignment east of US 29 and connected the White Flint METRO and Greenbelt METRO/MARC stations; (3) and the White Oak Transitway, which ran in an east-west direction approximately one mile north of I-495, connecting Grosvenor METRO, Wheaton METRO and Greenbelt METRO/MARC stations.

Even with a robust enhancement of bus service to feed the transit lines, the travel demand model indicated that ridership in 2020 on the Master Plan Transit Alternative and the Randolph Road Transitway would be substantially less than the generally accepted minimum ridership threshold volumes for new rail systems in the United States. The White Oak Transitway's projected ridership was close to the threshold volume, due to its location in the more densely developed southern portion of the Study Area. Furthermore, the highest projected ridership on any of the three transit alternatives was approximately 23,400 people per day, which provided only a 1.0% reduction in travel by auto.

With respect to *Community Mobility and Safety*, Ride On and WMATA bus services would operate within the roadway network and travel lanes shared by cars and trucks. Consequently, bus patrons who use the transit services would suffer the same congestion, delay, and accident experience as the cars and trucks sharing the roadways.

#### **4. Howard County Connection Alternatives**

Several variations of a connection between I-270 near Gaithersburg and MD 32 in Howard County have been suggested. However, an I-270/MD 32 connection has substantial socioeconomic impacts and requires a crossing of the Patuxent River. The general concept of an I-270/MD 32 connection as well as specific alignments suggested by citizens are discussed below.

As set forth in the ICC Purpose and Need, the ICC is intended to link existing and planned development areas between I-270 and I-95/US 1 within central and eastern Montgomery County and northwestern Prince George's County with a state-of-the-art, multi-modal, east-west highway that limits access and accommodates passenger and goods movement. A connection to MD 32 in Howard County would not achieve this, as MD 32 does not pass through Prince George's County and, in fact, the MD 32 interchange with I-95 is located seven miles north of the existing and planned development area in northern Prince George's County, where the County's master plan shows the ICC crossing I-95.

Other issues related to the *Movement of Goods and People To and From Economic Centers and Land Use* include:

- It would not accommodate trips between medium-density residential areas of eastern Montgomery County and the employment and housing centers in the I-270 and I-95 corridors.
- It would not provide a missing link in the Baltimore-Washington Transportation "grid," which represents the existing and planned transportation facilities intended to serve the Baltimore-Washington area in much the same way a grid of interconnecting streets serves a city. MD 32 is a component of that grid, as is the proposed ICC. Thus, a connection between I-270 and MD 32 in lieu of an ICC would replace two planned components of the grid with one, reducing capacity and interconnectedness.
- It would be inconsistent with the Howard County land use plans, which call for relatively low-density residential development in the southern portion of Howard County west of US 29.
- It would cross the Patuxent River and adjoining planned low-density development areas (2-5 acre lots or agricultural) in both Montgomery and Howard Counties, including the Montgomery County Agricultural Wedge.
- A MD 32 Connection does not meet the purpose of connecting existing and planned development between the I-270 and I-95 corridors because it would be located outside of designated growth areas and would oppose efforts to inhibit sprawl in this area. With respect to Maryland's Smart Growth Initiative, the numerous alignments that could connect to Howard County roadways would not be consistent with plans to limit sprawl.

In addition to the general discussion above, the means by which it would connect to I-270 poses significant challenges specifically with regard to *Environmental Stewardship*. The east side of I-270 from south of Rockville to north of Gaithersburg is almost entirely heavily developed, with no reserved corridor for such a highway. Three of the suggestions provided by the public are:

1. ***Pass through Mill Creek Towne Elementary School and connect to MD 108 approximately 1.3 miles west of MD 97.*** This alignment would pass directly through several densely developed neighborhoods in Mill Creek South and Mill Creek Towne as it extends northeast of I-370.
2. ***Extend from I-370 through Shady Grove Road/Midcounty Highway Intersection.*** This alignment would also pass through several densely developed neighborhoods as it extends northeast from I-370, particularly the area just east of Shady Grove Road.



3. ***Utilize the electric line ROW.*** The referenced PEPCO tower line crosses I-270 north of MD 124, passes through Montgomery Village, crosses MD 97 north of Olney (and Brookeville), generally parallels the Patuxent River from east of Brookeville to Burtonsville, crosses MD 198 near the Montgomery County/Prince George's County Line, and crosses I-95 near the ICC Master Plan Alignment. Under the suggested scenario, the ICC would follow the tower line from I-270 to a point east of Brookeville, where it would swing to the north to intersect MD 32. The connection to I-270 would impact Seneca Creek State Park and interfere with the planned I-270/Watkins Mill Road interchange. A substantial portion of the alignment would closely follow the Patuxent River, passing through a substantial portion of the Montgomery County Agricultural Wedge. In addition, because of the relatively steep terrain, substantial cuts and fills would be needed and additional right-of-way would be needed to accommodate both the ICC and the transmission lines.

## **5. Balanced Land Use Alternative**

Land use alternatives were evaluated in the 1997 DEIS and continue to be suggested by citizens as part of the current study. Land use patterns have an effect on travel demand, with the suggestions offered (e.g., more transit oriented development, more mixing of residential and employment development, more revitalization of existing communities) each contributing to a reduction in travel compared to more conventional development patterns found in many suburban areas throughout the United States. Both Montgomery and Prince George's Counties encourage such non-conventional development patterns. For example, the planned Konterra development (generally along I-95 south of MD 198) is zoned as an M-X-T project (mixed use) which, developed consistently with the Prince George's County *Subregion I Master Plan*, would reduce trip length as well as total trips due to the mixture of land uses and intensity of development over comparable amounts of more conventional development activity.

In addition, both Montgomery and Prince George's Counties have zoned numerous areas near existing and planned transit stations for high density development that can be supported by transit and thereby reduce the number and length of automobile trips. Examples include Wheaton, Glenmont, Grosvenor, White Flint, Twinbrook, Rockville, Shady Grove, and Greenbelt.

This overall land use pattern has been guided by the Counties' Wedges and Corridors concept for forty years (with Prince George's County's recent Biennial Growth Policy Plan focusing on a slightly different concept – "Tiers with Corridors and Nodes"), which is consistent with the more recently adopted Maryland Smart Growth initiatives, in that it focuses development in designated areas and preserves outlying areas for low density residential or agricultural use (one-third of Montgomery County was placed in the Agricultural Preserve). While the land uses in the area were developed in accordance with the long existing plans, transportation infrastructure for those plans has not kept pace with the development. Several other facts were considered in the decision of whether alternative land uses alone meet the project Purpose and Need. In light of these facts, this alternative does not meet the project purpose to support existing and planned development because it would require changes to development plans and patterns that have been guided by

overall land use (Wedges and Corridors concept) for forty years, which are also consistent with the more recently adopted Maryland Smart Growth initiatives. These supporting facts include:

- More than half of the existing households and 75% of the existing employment in the two counties have occurred since 1964, under the Wedges and Corridors concept.
- Each county has an ongoing process, which includes public involvement, to update and modify land use plans. These modifications reflect current County goals and objectives and address new concerns of the public and regulations imposed by Federal and State agencies. For example, Montgomery County, in its *1981 Eastern Montgomery County Master Plan*, reduced the density of planned land use in the Upper Paint Branch watershed to protect the stream system.
- The ICC Study Area is already substantially developed, as noted in M-NCPPC records, with nearly 80 percent of the planned households and employment in place in 2003. With development that has already received preliminary approval, these figures will increase.
- There is already substantial congestion in the Study Area with the current housing and employment. For example, the 1997 DEIS included evaluation of 54 key intersections in the Study Area, and showed that approximately 53% of them operated at or near capacity in the early 1990s. Although improvements have been made to several of these intersections in recent years, traffic volumes have continued to increase as development has continued, so that the same or worse conditions exist today, namely that about a quarter of the key intersections in the Study Area operate at or near capacity. In 2030, even with a number of major intersection improvements, nearly half of the Study Area intersections are expected to operate at or near capacity. Likewise, I-495 between MD 355 and US 1 operated at capacity in 1990. The duration of congestion along I-495 has increased since 1990. Hence, there is substantial congestion in the Study Area today, which is related in large part to existing development. Although future changes in land use could alter future development and thereby travel patterns, they would not appreciably affect existing development and travel.

Improvements to local intersections that were a part of the Congestion Relief Studies (CRS) conducted by SHA generally were included in the travel demand model used by the Transportation Policy Report Task Force (TPR-2) in a separate study of the effect of alternative land use scenarios on travel demand. The M-NCPPC Planning Board in Montgomery County established the TPR-2 in 2000 to analyze Montgomery County's role in the region and to recommend changes that might include the adoption of new policies as well as modifications to existing ones. The Task Force, which consisted of 33 voting and 2 nonvoting members, held numerous meetings and workshops over a two-year period. Their efforts included a public involvement process. (*The TPR-2 study is hereby incorporated into the ICC study by reference*). Therefore, these results still yield the same conclusion; that the intersection improvements that are part of the CRS are localized improvements that relieve intersection congestion and do very little to accommodate more significant east-west capacity needs. If a balanced land use/transit alternative is adopted in lieu of major east-west capacity improvements, traffic engineers have concluded that significant congestion will still exist in the Study Area. They also stipulate that there is little, if any relationship between localized intersection improvements and the effectiveness of a balanced land use/transit alternative.

The 1997 DEIS included a study that developed and evaluated an alternative 2020 land use scenario, which assumed the following:

- No ICC
- Approximately 20,000 fewer jobs and 2,000 fewer households in the Study Area than assumed in the traditional land use forecasts
- A “better” balance of jobs and households in both the I-270 and I-95 corridors, i.e., more households and fewer jobs in the I-270 corridor and fewer households and more jobs in the eastern part of the Study Area
- The amount of growth would not exceed the maximum master plan limits in any given area or sub-area.

The results of the analysis showed a minimal reduction in traffic (less than 2,000 trips per day) on east-west roadways, approximately 2% of the total travel volumes. (More detailed information is presented in Section II-A3b of the 1997 ICC DEIS).

## **6. Combined Balanced Land Use and Enhanced Transit Alternative**

In addition to the issues described elsewhere in this document for transit and land use alternatives, the following points are pertinent in considering this combined alternative.

Two land use alternatives were considered by the TPR-2 for 2025 and 2050: Master Plan Land Use and Alternative Land Use. Both alternatives assumed the same numbers of projected households and jobs in Montgomery County in 2025 and 2050, but the Alternative Land Use scenario redistributed jobs and households in an attempt to place jobs and households even closer together, similar to the alternative land use scenario evaluated in the 1990s ICC study. The Alternative Land Use scenario was evaluated with both an enhanced road network and an enhanced transit network. The travel demand modeling performed for the TPR-2 showed that in 2050, the total number of daily auto trips in Montgomery County would be 5% less with the Alternative Land Use and Enhanced Transit Network than it would with the Master Plan Land Use and Enhanced Road Network, even though the number of daily transit trips would increase by 20%. (Daily auto trips with Alternative Land Use and Enhanced Transit would be 719,038 vs. 95,106 daily transit trips.)

Thus, the combined Alternative Land Use and Enhanced Transit Network would reduce auto trips by only 5%, equivalent to a few years worth of normal traffic growth, and therefore would not obviate the need for roadway improvements. Likewise, as stated earlier in this section, a Transit-Only Alternative would effect only a 1% reduction in auto trips, and a balanced land use alternative less than a 2% reduction, again offering minimal improvement to mobility.

The TPR-2 recommended (without specifying actual numbers) that Montgomery County study and implement appropriate land use changes through the master plan process via measures such as:

- Examining opportunities to improve the balance of jobs and housing within planning areas

- Exploring opportunities for more housing at METRO Stations and in other activity centers, where appropriate
- Placing more jobs in eastern Montgomery County
- Supporting more housing at appropriate locations in the I-270 corridor
- Supporting more transit oriented development.

In 2002, the Montgomery County Planning Board issued its Transportation Policy Report which recommended, again without specific numbers, that there be a better balance of jobs and housing within the framework of the General Plan and that the County focus on more transit-oriented development. The Montgomery County Council adopted the land use recommendations of the Planning Board as guidance in updating area master plans in coming years.

Thus, based on the results of numerous technical studies, the Montgomery County Planning Board and County Council, as recently as 2002, have decided against wholesale changes in largely settled land use, but are pursuing a higher balance of jobs and housing and more transit oriented development as area master plans are updated. These changes are likely to be fewer than those contained in the TPR-2 Alternative Land Use scenario, the modeling of which, in combination with an Enhanced Transit Network, showed no appreciable reduction in the demand for roadway travel and minimal improvement to mobility, safety, and travel time.

## **7. M-NCPPC Staff and Board Hybrid Alternatives**

In summer 1997, as part of its analysis of the previous ICC DEIS, M-NCPPC (Montgomery County) developed two alternatives, termed the M-NCPPC Staff Hybrid and the M-NCPPC Board Hybrid. The Staff Hybrid alternative contained three principal components:

- A six-lane highway from I-370 to MD 198 at Van Dusen Road, utilizing portions of the 1997 Northern Alternative (NA) and MM 198 alignments. It included a connection from this six-lane highway to Midcounty Highway at Shady Grove Road, having full access control except through Spencerville and along MD 198 west of I-95, where the road would have partial or no access controls. At-grade intersections would be provided along MD 198 at Good Hope Road, Thompson Road, Peach Orchard Road, Oursler Road, Kruhm Road, McKnew Road, Riding Stable Road, Old Gunpowder Road, and Sweitzer Lane
- A 6-lane roadway from US 29 to US 1 along the 1997 Master Plan Alternative (MPA) alignment, with a 2-lane extension westward to Fairland Road
- Intersection improvements along Randolph Road (at MD 355, MD 586, MD 85, MD 97, and MD 650).

The Board Hybrid alternative also contained three principal components:

- A fully access controlled highway between I-370 and I-95, with four lanes west of US 29 and six lanes to the east. The roadway generally followed the NA alignment from I-370 to MD 198 near the County Line, where it followed MD 198 as a four-lane roadway with flanking two-lane, one-way frontage roads
- A six-lane roadway from US 29 to US 1 along the 1997 MPA alignment

- Intersection improvements along Randolph Road.

The Staff Hybrid Alternative, by introducing the segments with no or only partial access control mixed within an access controlled highway, raised the same concerns as set forth in the discussion of an arterial roadway, namely *Community Mobility and Safety*, *Local Land Use*, and *Homeland Security*. The *Community Mobility and Safety* concerns were especially severe with this alternative due to its placement of five at-grade intersections through Spencerville and four west of I-95 (along with numerous private entrances in both areas) in what would otherwise be a 17-mile long highway with full access controls. This would create a situation somewhat similar to the safety and capacity problems in Breezewood, Pennsylvania, where motorists on I-70 wishing to connect to the PA Turnpike must pass through a short section of roadway with at-grade intersections and no access control. Motorists must switch back and forth between highway and arterial conditions, necessitating changes in speeds and driver expectations.

The intersection improvements along Randolph Road would have the same deficiencies in addressing the ICC Purpose and Need as described in the discussion of the UERA, including placing more traffic on local roads and arterials that, even with the improvements, would remain heavily congested. Furthermore, most of the Randolph Road intersection improvements have been or are being addressed as part of the Congestion Relief Study (CRS). The CRS improvements, however, including those along Randolph Road, are intended to improve localized intersection operations, which will benefit many travelers. If Randolph Road were to be the east-west capacity link, it would still have insufficient capacity as an arterial to accommodate projected congestion levels.

The remaining two components of both the Staff and Board Hybrids (i.e., new highway between I-370 and I-95 area and new highway between US 29 and US 1 along the MPA alignment) were included for the most part in the 1997 MPA or NA, but without the full access control. The number of lanes on the MPA and NA will be determined through evaluation of the results of the travel demand modeling as well as the engineering and environmental studies.

The two connections described in the Staff Hybrid (Midcounty Highway to the proposed six-lane roadway and US 29 to Fairland Road) were local connections that did not address the project Purpose and Need.

The component of the Staff and Board Hybrids that utilized MD 198 from just west of the Montgomery County/Prince George's County line to Van Dusen Road east of I-95 had specific issues associated with it:

- It would not provide a direct new connection to I-95 for the major east-west roadway;
- It would alter the existing and planned role of MD 198 as an arterial serving more of a local than regional role. This was especially true of the Staff Hybrid that utilized MD 198 through Spencerville;
- It would either have at-grade intersections and private entrances along MD 198 west of I-95 (Staff Hybrid) with attendant safety and capacity deficiencies, or introduce frontage roads in the area (Board Hybrid) with substantial impacts on adjoining residences and businesses;

- It would tend to increase traffic on MD 198 through Laurel, thereby exacerbating traffic congestion in the downtown area.

### **C. Summary of Alternatives Screening**

In addition to the seven alternatives addressed above, the public suggested several other alternatives that were evaluated and screened based on their ability to meet the Purpose and Need of the Study Area. A summary of all alternatives is presented in the table below. This Alternatives Screening Matrix was presented as a handout at the Alternatives Public Meetings for comment and discussion as well as on the ICC website and is included in full in this package for consistency with the information presented to the public.

**Table III-1: Alternatives Screening Matrix**

Suggested Alternative	Summary of SHA Thinking Prior to the Alternatives Workshop
<p><b>Improve I-495:</b> An I-95/I-495 Capital Beltway Study is currently evaluating improvement of Maryland’s 42-mile portion of the Capital Beltway, and is being coordinated with a similar study by Virginia DOT. Although the focus of the study is on provision of managed lanes, as part of that study, improvement of interchanges will also be considered. Improved mobility and safety in the ICC Study Area is not designed or intended to relieve Beltway congestion.</p>	<p>Improvements to the Capital Beltway have and continue to be the subject of a separate project planning study to resolve an important but different set of transportation needs. The improvements to I-495 would not meet this project’s purpose and need.</p> <p><b>Community Mobility and Safety</b></p> <ul style="list-style-type: none"> <li>• Improvements to I-495 would not address traffic congestion on local routes in the Study Area. A sensitivity analysis, conducted as part of the 1990s ICC study, indicated that provision of HOV lanes on I-495 would alter traffic volumes on roads in the ICC Study Area by not more than 5%</li> <li>• The Capital Beltway is a critical component in the region’s transportation network and is in need of improvement, yet those are different needs not necessarily related to those outlined for the ICC study</li> </ul> <p><b>Movement of Goods and People To and From Economic Centers</b></p> <ul style="list-style-type: none"> <li>• Improvements to I-495 would not connect the corridor growth centers of I-270 near Rockville/Gaithersburg and I-95/US 29 near Laurel</li> <li>• Even with improvements to the I-495 corridor, demand is expected to continue to exceed capacity. Thus, traffic to or from economic centers north of the Beltway would experience congestion if attempting to use I-495</li> </ul> <p><b>Local Land Use</b></p> <ul style="list-style-type: none"> <li>• Improvements to I-495 would not link the planned medium density residential areas of eastern Montgomery County with the planned growth area of northern Prince George’s County</li> <li>• Improvements to I-495 would not serve the existing and planned developed area of eastern Montgomery County, due to the Beltway’s location and the limited capacity (and adjacent dense development, which effectively precludes addition of substantial capacity) of the radial routes between the residential areas and the Beltway</li> <li>• Improvements to the Beltway alone would not provide the much needed new capacity and system redundancy</li> </ul> <p><b>Homeland Security</b></p> <ul style="list-style-type: none"> <li>• Improvements to I-495 would not provide enough additional east-west capacity and system redundancy to accommodate emergency response or citywide and METRO area evacuation in central and eastern Montgomery and northwestern Prince George’s Counties</li> </ul>

Suggested Alternative	Summary of SHA Thinking Prior to the Alternatives Workshop
<p><b>An Auto-Train Route:</b> Build railroad tracks and install a car-carrying rail shuttle</p>	<p>Providing an auto-train linking the two growth corridors would not meet the project's purpose and Study Area needs.</p> <p><b>Community Mobility and Safety</b></p> <ul style="list-style-type: none"> <li>• Previous transit and rail studies have shown that these modes do not attract enough ridership to reduce travel by auto. Transit service, particularly an auto-train route in lieu of an ICC highway, would generally be difficult to provide and sustain in outer suburbs</li> </ul> <p><b>Movement of Goods and People To and From Economic Centers</b></p> <ul style="list-style-type: none"> <li>• The 17 ± miles between the proposed ends of the ICC is an extremely short distance for auto trains, which are typically used for long distance travel (e.g., Virginia to Florida). The time required to load and unload vehicles would be in the order of 60 minutes/trip, which would more than offset time savings offered by an ICC, resulting in few people using the route</li> <li>• The 1997 DEIS (p. VI-31) indicated that only about 25% of the ICC users had both an origin and a destination outside the Study Area. It is these motorists who are traveling from one end of the ICC to the other, that could be served by an auto train. The other 75% would not be well served</li> </ul> <p><b>Local Land Use</b></p> <ul style="list-style-type: none"> <li>• An auto-train would not be consistent with land use in Montgomery County and would not support its orderly growth and development patterns</li> </ul> <p><b>Homeland Security</b></p> <ul style="list-style-type: none"> <li>• An auto-train route would not provide enough additional east-west capacity and system redundancy to accommodate emergency response or citywide and METRO area evacuation in central and eastern Montgomery and northwestern Prince George's Counties</li> </ul>
<p><b>Alignment or Alternative Option:</b> Extend ICC west of I-270 and/or east of US 1. As shown in the master plans of Montgomery and Prince George's Counties, the ICC would extend from I-270 on the west to US 301 south of Bowie on the east.</p>	<p>The definition of the project's limits is based on the need to link existing and proposed development areas between I-270 and I-95/US 1. Extending the project beyond those limits would not be consistent with the project's purpose and Study Area needs.</p> <p><b>Community Mobility and Safety/Movement of Goods and People To and From Economic Centers</b></p> <ul style="list-style-type: none"> <li>• Prince George's County's master plans currently show the ICC (designated A-44 on the County's plans) extending east of US 1 to US 301. The County intends to begin an update of the master plans in the area east of US 1 in 2003, with a draft report expected to be completed in late 2004. The update, which will include travel demand modeling and evaluation of alternatives, will consider whether A-44 should be retained or dropped east of US 1.</li> <li>• The modeling showed that traffic volumes on A-44 east of the Baltimore-Washington Parkway would be the same with or without</li> </ul>



Suggested Alternative	Summary of SHA Thinking Prior to the Alternatives Workshop
	<p>the construction of the ICC west of US 29. This indicates that the ICC east of I-95/US 1 would serve a different market than the ICC west of I-95/US 1, and supports the thought that A-44 east of US 1 is a project independent of the current project</p> <p><b>Local Land Use</b></p> <ul style="list-style-type: none"> <li>• An extension of the ICC west of I-270 would not be consistent with land use in Montgomery County</li> <li>• The State of Maryland is currently working with Virginia on whether to analyze traffic crossing the Potomac River to gain insight on origins and destinations. A future crossing of the Potomac not address the purpose or need of the current project</li> </ul>

Suggested Alternative	Summary of SHA Thinking Prior to the Alternatives Workshop
<p><b>Alignment or Alternative Option:</b> Construct a roadway from I-270/Falls Road to the Master Plan Alternative at MD 97 in lieu of building Master Plan Alignment between I-370 and MD 97</p>	<p><b>Movement of Goods and People To and From Economic Centers</b></p> <ul style="list-style-type: none"> <li>Connecting to I-270 at Falls Road near Rockville would not link to I-370, which is closer to the heart of the development in the I-270 corridor.</li> </ul> <p><b>Local Land Use</b></p> <ul style="list-style-type: none"> <li>This alignment would pass through densely developed residential and commercial areas, including downtown Rockville and the Gude Drive/Southern Lane area, as well as through several neighborhoods such as Avery Lodge south of MD 115</li> <li>With no reserved corridor available through these areas, the residential and commercial impacts and costs would be prohibitive</li> </ul>
<p><b>Alignment or Alternative Option:</b> Move road south of all other alternatives</p>	<p>Providing a roadway closer to the Capital Beltway would not meet the project's purpose and Study Area needs. MDOT continues to explore the transportation needs in and around the Beltway Corridor with highway and transit corridor studies.</p> <p><b>Community Mobility and Safety</b></p> <ul style="list-style-type: none"> <li>These alignments are too far south to address traffic congestion on local routes in the Study Area</li> <li>Previous studies have shown that improvements farther south and closer to the Capital Beltway would have very little affect on traffic volumes on the local streets in the central portions of the ICC Study Area</li> </ul> <p><b>Movement of Goods and People To and From Economic Centers</b></p> <ul style="list-style-type: none"> <li>Improvements closer to the Beltway would not connect the corridor growth centers of I-270 near Rockville/Gaithersburg and I-95 near Laurel</li> </ul> <p><b>Local Land Use</b></p> <ul style="list-style-type: none"> <li>Placement of a new east-west road in the highly developed areas noted is not practicable, as it would require an extremely large number of displacements and split established communities</li> </ul> <p><b>Homeland Security</b></p> <ul style="list-style-type: none"> <li>Improvements closer to I-495 would not provide enough additional east-west capacity and system redundancy to accommodate emergency response or citywide and METRO area evacuation in central and eastern Montgomery and northwestern Prince George's Counties</li> </ul>
<p><b>Build I-95 to continue through the District</b></p>	<p>Improvements to I-95 were considered in the past to resolve a different set of transportation needs. Improvements to I-95 would not meet this project's purpose and Study Area needs.</p> <p><b>Community Mobility and Safety/Movement of Goods and People To and From Economic Centers</b></p> <ul style="list-style-type: none"> <li>The extension of I-95 through the District of Columbia would result</li> </ul>

Suggested Alternative	Summary of SHA Thinking Prior to the Alternatives Workshop
	<p>in the construction of a north-south road, with no significant benefit to east-west travel in the ICC Study Area</p> <ul style="list-style-type: none"> <li>• No significant traffic congestion and mobility improvements in the Study Area would be realized</li> <li>• Such a connection would not link development areas between 1-270 and I-95</li> </ul> <p><b>Local Land Use</b></p> <ul style="list-style-type: none"> <li>• Such an extension has been considered in the past and dropped from plans by both Maryland and the District of Columbia due to socioeconomic impacts</li> <li>• An extension of I-95 into the District of Columbia would not serve community and development areas in the Study Area</li> </ul> <p><b>Homeland Security</b></p> <ul style="list-style-type: none"> <li>• An extension of I-95 through DC would not provide any additional east-west capacity and system redundancy to accommodate emergency response or citywide and METRO area evacuation in central and eastern Montgomery and northwestern Prince George's Counties</li> </ul>

Suggested Alternative	Summary of SHA Thinking Prior to the Alternatives Workshop
<p><b>Transportation Systems Management/Travel Demand Management (TSM/TDM)</b>  <b>Alternative:</b> Synchronizing traffic signals, improving transit, telecommuting, bicycles, transit-oriented development and better land use</p>	<p>TSM/TDM measures could be effective in combination with other build alternatives. Alone, they are not sufficient to meet the ICC purpose and need. Many TSM and TDM measures are included in the potential study alternatives. For instance, many TDM measures are included in the region’s travel models and therefore included in projections of need and benefit. Likewise for TSM improvements, many intersection upgrades have and continue to be constructed and improvements to transit service will be included with any proposed build alternative.</p> <p><b>Community Mobility and Safety</b></p> <ul style="list-style-type: none"> <li>• These measures by themselves do not reduce the travel demand to such a degree that an ICC would not be needed</li> <li>• TSM/TDM measures do not significantly affect mobility and safety beyond localized improvements</li> </ul> <p><b>Movement of Goods and People To and From Economic Centers</b></p> <ul style="list-style-type: none"> <li>• TSM/TDM measures do not provide sufficient highway capacity across the Study Area to be as efficient and reliable as needed to accommodate movement of goods and people to and from economic centers</li> </ul> <p><b>Homeland Security</b></p> <ul style="list-style-type: none"> <li>• TSM/TDM measures do not provide a reliable alternate east-west route for emergency response situations</li> </ul>
<p><b>Upgrade Existing Roads</b>  <b>Alternative:</b> The 1997 ICC DEIS included an Upgrade Existing Roads Alternative (UERA) that called for widening approximately 34 miles of east-west and north-south roadways to or beyond the number of lanes specified in the counties’ master plans, as well as the improvement of 26 major intersections. The improved roadways included MD 355, MD 115, MD 28, MD 198, Norwood Road, Briggs Chaney Road, Fairland Road, Cherry Hill Road, Old Gunpowder Road, and Contee Road.</p>	<p>A system of arterial roadway improvements does not meet the project’s purpose and the Study Area needs based on limited capacity (specifically at intersections) and lack of access control.</p> <p><b>Community Mobility and Safety</b></p> <ul style="list-style-type: none"> <li>• The UERA places more traffic on local roads and arterials that, even with the improvements, would remain heavily congested</li> <li>• Increasing the number of lanes beyond that already master planned would be extremely costly and impactful</li> <li>• Motorists would be subject to frequent signalized intersections, entrances, and driveways</li> <li>• With the UERA, transit trips between Laurel and Gaithersburg would take nearly twice as long than with an access-controlled highway. Likewise, auto trips would take nearly twice as long with the UERA compared to an access-controlled highway</li> <li>• Long-distance trips would need to be made on a variety of different collectors and arterials, with travelers outside of the Study Area mixing with the more local traffic</li> <li>• Motorists traveling east-west would need to use north-south arterials to reach the east-west travel corridors, making these disjointed trips longer than a direct link</li> <li>• Motorists on the UERA would experience substantially more</li> </ul>

Suggested Alternative	Summary of SHA Thinking Prior to the Alternatives Workshop
	<p>accidents on the arterial routes than on an access-controlled highway</p> <p><b>Movement of Goods and People To and From Economic Centers</b></p> <ul style="list-style-type: none"> <li>• The UERA would not provide new highway capacity across the Study Area that is efficient and reliable as needed to accommodate movement of goods and people</li> <li>• Does not provide a high quality connection between economic centers</li> </ul> <p><b>Local Land Use</b></p> <ul style="list-style-type: none"> <li>• Significant pressures for strip development and undesirable intense commercial development would be generated adjacent to the intersections</li> <li>• Wider arterial roadways would tend to transform the character of a community of a medium-density nature to a more urban nature</li> <li>• Many of the roadways identified as part of this alternative are lined with existing residences and established businesses that would be severely impacted or displaced by adding lanes to increase capacity</li> </ul> <p><b>Homeland Security</b></p> <ul style="list-style-type: none"> <li>• The time it would take to traverse the Study Area on an access-controlled highway is considerably less than on an arterial roadway like MD 355 or MD 28</li> <li>• Because long-distance trips would need to be made on a variety of different collectors and arterials and mix with local traffic, the UERA would not provide a reliable alternate east-west route for emergency response situations</li> </ul>

Suggested Alternative	Summary of SHA Thinking Prior to the Alternatives Workshop
<p><b>Transit Only Alternative:</b> Transit Only Alternatives were evaluated in the 1997 DEIS and more recently suggested as part of the current study. A Transit Only Alternative would consist of options that only include transit systems such as a new light rail or commuter rail system on a dedicated transitway to connect origins and destinations in the I-270 and I-95 corridors. No new roadways or improvements to existing roadways would be included in this alternative. Three light rail transit alternatives were evaluated in the 1997 DEIS: (1) the Master Plan Transit Alternative along the ICC master plan corridor, (2) the Randolph Road Transitway, and (3) and the White Oak Transitway.</p>	<p>Transit Only Alternatives would only minimally reduce the number of automobiles and trucks using the already congested system of roadways in the Study Area and therefore would have a negligible effect on congestion. Transit Only Alternatives would not meet this project's purpose and Study Area needs. Each of the potential build alternatives will include a system of transit improvements including express bus along and feeder bus service to the alignments.</p> <p><b>Community Mobility and Safety</b></p> <ul style="list-style-type: none"> <li>• Circumferential transit service, as would be needed for transit in lieu of an ICC highway, is generally difficult to provide and sustain in less dense suburbs</li> <li>• The travel demand model indicated that ridership in 2020 on the 1997 DEIS Master Plan Transit Alternative and the Randolph Road Transitway would be substantially less than the generally accepted minimum ridership threshold volumes for new rail systems in the United States</li> <li>• The highest projected ridership on any of the three 1997 DEIS transit alternatives provided only a 1.0% reduction in travel by auto</li> </ul> <p><b>Local Land Use/Movement of Goods and People To and From Economic Centers</b></p> <ul style="list-style-type: none"> <li>• The wedges between radial corridors are planned for lower density and thus will not promote concentration of travel plans via transit</li> <li>• Both the residential and workplace (or other non-home) ends of the trips would be in lower density environments, which is not conducive to effective transit service</li> <li>• Moving goods as well as people cannot be done efficiently with transit</li> </ul> <p><b>Homeland Security</b></p> <ul style="list-style-type: none"> <li>• Transit-only measures would not provide a reliable alternate east-west route for emergency response situations such as emergency response or citywide and METRO area evacuation</li> </ul>
<p><b>Howard County Connection Alternatives:</b> I-270 to I-95 utilizing MD 216, MD 32 or MD 100</p>	<p>The ICC is intended to link existing and proposed development areas between I-270 and I-95/US 1 within central and eastern Montgomery County and northwestern Prince George's County. A connection to Howard County would not achieve this.</p> <p><b>Community Mobility and Safety</b></p> <ul style="list-style-type: none"> <li>• A Howard County Connection would not provide a missing link in the Baltimore-Washington Transportation Grid, of which MD 32 is a component, as is the proposed ICC. Thus, a connection between I-270 and MD 32 in lieu of an ICC would replace two planned components of the grid with one, reducing capacity and interconnectedness</li> </ul> <p><b>Movement of Goods and People To and From Economic Centers</b></p>

Suggested Alternative	Summary of SHA Thinking Prior to the Alternatives Workshop
	<ul style="list-style-type: none"> <li>• A connection to MD 32 in Howard County would not link development areas in Montgomery and Prince George’s Counties, as MD 32 does not pass through Prince George’s County (the MD 32 interchange with I-95 is located seven miles north of the existing and planned development area in northern Prince George’s County)</li> <li>• It would not accommodate trips between medium-density residential areas of eastern Montgomery County and the employment and housing centers in the I-270 and I-95 corridors</li> </ul> <p><b>Local Land Use</b></p> <ul style="list-style-type: none"> <li>• It would be inconsistent with the Howard County land use plans, which call for relatively low-density residential development in the southern portion of Howard County west of US 29</li> <li>• I-270/MD 32 connection has substantial socioeconomic impacts and requires a crossing of the Patuxent River and the Montgomery County Agricultural Wedge</li> <li>• The east side of I-270 from south of Rockville to north of Gaithersburg is almost entirely heavily developed, with no reserved corridor for such a connection</li> </ul> <p><b>Homeland Security</b></p> <ul style="list-style-type: none"> <li>• A connection into Howard County would not provide system redundancy to accommodate emergency response or citywide and METRO area evacuation in central and eastern Montgomery and northwestern Prince George’s Counties</li> </ul>

Suggested Alternative	Summary of SHA Thinking Prior to the Alternatives Workshop
<p><b>Balanced Land Use Alternative:</b> Implement an alternative land use plan that provides more transit oriented development, revitalization of existing communities, and a better balance of housing and jobs (i.e., more housing and fewer jobs in the I-270 Corridor and less housing and more jobs in eastern Montgomery County/northern Prince George's County). The 1997 DEIS included a study that developed and evaluated the following alternative 2020 land use scenario with the following assumptions:</p> <ul style="list-style-type: none"> <li>• No ICC</li> <li>• Approximately 20,000 fewer jobs and 2,000 fewer households in the Study Area than assumed in the traditional land use forecasts</li> <li>• A "better" balance of jobs and households in both the I-270 and I-95 corridors, i.e., more households and fewer jobs in the I-270 corridor and fewer households and more jobs in the eastern part of the Study Area</li> <li>• The amount of growth did not exceed the maximum master plan limits in any given area or sub-area.</li> </ul>	<p>With substantial congestion in the Study Area today that is largely related to existing development, future changes in land use could not appreciably affect existing development and travel. A land use only alternative would not address this project's purpose nor satisfy the needs of the Study Area. However, as a result of previous studies, the local government has adopted many of these principles in their process of updating local master plans.</p> <p><b>Community Mobility and Safety</b></p> <ul style="list-style-type: none"> <li>• Results of the 1997 DEIS analysis showed a minimal impact (less than 2,000 trips per day) on east-west roadways, approximately 2% of the total travel volumes. (Section II-A3b of the 1997 ICC DEIS)</li> </ul> <p><b>Movement of Goods and People To and From Economic Centers</b></p> <ul style="list-style-type: none"> <li>• Shifts in land use would not provide new highway capacity across the Study Area that is efficient and reliable as needed to accommodate movement of goods and people</li> <li>• Does not provide a high quality connection between economic centers</li> </ul> <p><b>Local Land Use</b></p> <ul style="list-style-type: none"> <li>• The Wedges and Corridors concept, which is consistent with the more recently adopted Smart Growth initiatives, focuses development in designated areas and preserves outlying areas for low density residential or agricultural use (one-third of Montgomery County was placed in the Agricultural Preserve)</li> <li>• The 1981 Eastern Montgomery County Master Plan reduced the density of planned land use in the Upper Paint Branch watershed to protect the stream system</li> <li>• The ICC Study Area is already substantially developed, as noted in M-NCPPC records, with nearly 80 percent of the households and employment planned at build-out in place in 2003</li> </ul> <p><b>Homeland Security</b></p> <ul style="list-style-type: none"> <li>• Land use only measures would not provide a reliable alternate east-west route for emergency response situations such as citywide and METRO area evacuation</li> </ul>
<p><b>Combined Balanced Land Use and Enhanced Transit Alternative:</b> in early 2000, the Montgomery County Planning Board established the Transportation Policy Report Task Force (TPR-2) to analyze Montgomery County's role in the region and to recommend changes as part of new policies or modifications to existing ones. Two land use</p>	<p>Studies of a combined land use and transit alternative have shown no appreciable reduction in the demand for roadway travel. This combined alternative, like its component parts, would not address this projects' purpose nor satisfy the Study Area's needs.</p> <p><b>Community Mobility and Safety</b></p> <ul style="list-style-type: none"> <li>• The combined Alternative Land Use and Enhanced Transit Network would reduce auto trips by only 5%, equivalent to a few years worth of normal traffic growth, and therefore would not obviate the need for roadway improvements</li> </ul>



Suggested Alternative	Summary of SHA Thinking Prior to the Alternatives Workshop
<p>alternatives were considered by the TPR-2 for 2025 and 2050: Master Plan Land Use and Alternative Land Use. Both kept the same numbers of projected households and jobs in Montgomery County in 2025 and 2050, but the Alternative Land Use Scenario redistributed jobs and households in an attempt to place jobs and households even closer together. The Alternative Land Use scenario was evaluated with both an Enhanced Road Network and an Enhanced Transit Network.</p>	<p><b>Movement of Goods and People To and From Economic Centers</b></p> <ul style="list-style-type: none"> <li>• Shifts in land use in combination with transit improvements would not provide new highway capacity across the Study Area that is efficient and reliable as needed to accommodate movement of goods and people</li> <li>• Does not provide a high quality connection between economic centers</li> </ul> <p><b>Local Land Use</b></p> <ul style="list-style-type: none"> <li>• Based on the results of numerous technical studies, Montgomery County’s Planning Board and County Council decided against wholesale changes in land use, but are pursuing a better balance of jobs and housing and more Transit Oriented Development as area master plans are updated</li> <li>• The 1981 Eastern Montgomery County Master Plan reduced the density of planned land use in the Upper Paint Branch watershed to protect the stream system</li> </ul> <p><b>Homeland Security</b></p> <ul style="list-style-type: none"> <li>• Land use and transit measures would not provide a reliable alternate east-west route for emergency response situations such as citywide and METRO area evacuation</li> </ul>
<p><b>Hybrid Alternatives:</b></p> <p><b>Hybrid #1:</b></p> <ul style="list-style-type: none"> <li>• A six-lane highway from I-370 to MD 198 at Van Dusen Road, a connection from this six-lane highway to Midcounty Highway at Shady Grove Road, having full access control except through Spencerville and along MD 198 west of I-95, where the road would have partial or no access controls. At-grade intersections would be provided along MD 198 at Good Hope Road, Thompson Road, Peach Orchard Road, Oursler Road, Kruhm Road, McKnew Road, Riding Stable Road, Old Gunpowder Road, and Sweitzer Lane</li> <li>• A 6-lane roadway from US 29 to US 1 along the Master Plan Alternative (MPA) alignment,</li> </ul>	<p>An arterial roadway with intersection improvements along Randolph Road would have the same deficiencies in addressing the ICC Purpose and Need as described in the discussion of the UERA, including placing more traffic on local roads and arterials that, even with the improvements, would remain heavily congested. Furthermore, most of the Randolph Road intersection improvements have been or are being addressed as part of the Congestion Relief Study. The Hybrid Alternatives would not address the purpose and need of this project.</p> <p><b>Community Mobility and Safety</b></p> <ul style="list-style-type: none"> <li>• With the Hybrid #1 Alternative, the placement of five at-grade intersections through Spencerville and four west of I-95 (along with numerous private entrances in both areas) within a 17-mile long access-controlled highway would necessitate changes in speeds and driver expectations as motorists switch back and forth between freeway and arterial conditions</li> <li>• The intersection improvements along Randolph Road would place more traffic on local roads and arterials that, even with intersection improvements, would remain heavily congested</li> <li>• Utilizing MD 198 from just west of the Montgomery County/Prince George’s County line to Van Dusen Road east of I-95 would not provide a direct new connection to I-95 for the major east-west roadway</li> <li>• It would either have at-grade intersections and private entrances</li> </ul>

Suggested Alternative	Summary of SHA Thinking Prior to the Alternatives Workshop
<p>with a two-lane extension westward to Fairland Road</p> <ul style="list-style-type: none"> <li>• Intersection improvements along Randolph Road (at MD 355, MD 586, MD 85, MD 97, and MD 650)</li> </ul> <p><b>Hybrid #2:</b></p> <ul style="list-style-type: none"> <li>• A fully access controlled highway between I-370 and I-95, with four lanes west of US 29 and six lanes to the east. The roadway generally followed the NA alignment from I-370 to MD 198 near the County Line, where it followed MD 198 as a four-lane roadway with flanking two-lane, one-way frontage roads</li> <li>• A six-lane roadway from US 29 to US 1 along the MPA alignment</li> <li>• Intersection improvements along Randolph Road.</li> </ul>	<p>along MD 198 west of I-95 (Hybrid #1) with attendant safety and capacity deficiencies, or introduce frontage roads in the area (Hybrid #2) with substantial impacts on adjoining residences and businesses</p> <ul style="list-style-type: none"> <li>• It would tend to increase traffic on MD 198 through Laurel, thereby exacerbating traffic congestion in the downtown area</li> </ul> <p><b>Movement of Goods and People To and From Economic Centers</b></p> <ul style="list-style-type: none"> <li>• Utilizing MD 198 from just west of the Montgomery County/Prince George’s County line to Van Dusen Road east of I-95 would alter the existing and planned role of MD 198 through Spencerville as an arterial serving more of a local than regional role</li> </ul> <p><b>Local Land Use</b></p> <ul style="list-style-type: none"> <li>• Significant pressures for undesirable strip development and more intense commercial development could be generated adjacent to the intersections</li> <li>• Arterial roadways would tend to transform the character of a community of a medium-density nature to a more urban nature</li> </ul> <p><b>Homeland Security</b></p> <ul style="list-style-type: none"> <li>• Arterial roadways would not provide a reliable alternate east-west route for emergency response situations such as citywide and METRO area evacuation</li> </ul>

Suggested Alternative	Summary of SHA Thinking Prior to the Alternatives Workshop
<p><b>Midcounty Highway-MD 198 (MM 198) Alternative:</b> In the 1997 DEIS, MM 198 was a six-lane urban arterial extending from the Midcounty Highway/ Shady Grove Road intersection to MD 198 at Van Dusen Road east of I-95 with the following components:</p> <ul style="list-style-type: none"> <li>• MM 198 would not connect to I-370 and provides no new connection to I-95</li> <li>• MM 198 would have a 50 mph design speed, compared to 60 mph for an access-controlled highway</li> <li>• MM 198 would be an arterial, with two 38-foot wide roadways and no shoulders</li> <li>• MM198 would have twenty at-grade intersections and two interchanges.</li> </ul>	<p>As an arterial roadway, MM 198 would not address this project’s purpose nor satisfy the Study Area’s needs. Based on many of the features of the original MM 198 Alternative, the footprints of all alternatives are being reduced to minimize environmental impacts. In addition, portions of the MM 198 Alternative are being included as alignment options as part of Corridor 2. The following pertains to the arterial nature of the MM 198 as proposed in the 1997 DEIS:</p> <p><b>Community Mobility and Safety</b></p> <ul style="list-style-type: none"> <li>• Unless the intersections along MM 198 were very large (requiring very large amounts of right-of-way, in some cases as much, if not more, than an interchange), a LOS D or better could not be attained at most of the intersections</li> <li>• Arterial roadways with intersections typically experience accident rates four times as high as access-controlled facilities, and fatal accidents tend to occur at a rate three times as high on arterial roadways</li> <li>• The MM 198 Alternative provides only one corridor to be shared by both local and through traffic, whereas the freeway alternatives provide a new corridor for through traffic and allow the existing roadway network to be used by local traffic. The MM 198 Alternative results in conflicts between local and through traffic and therefore increases accident potential</li> </ul> <p><b>Movement of Goods and People To and From Economic Centers</b></p> <ul style="list-style-type: none"> <li>• The previous alignment of MM 198 did not connect directly to I-270 and provides no new access to I-95</li> <li>• With MM 198, motorists would need to travel heavily congested roads such as Shady Grove Road to access I-270</li> <li>• As an example and as summarized in the 1997 DEIS P. IV-50, MM 198 would not by itself generate extensive economic growth outside of a corridor surrounding the new arterial</li> <li>• The MM 198 Alternative directs traffic through the City of Laurel, whereas the freeway alternatives would not provide a direct connection to MD 198</li> </ul> <p><b>Local Land Use</b></p> <ul style="list-style-type: none"> <li>• Significant pressures for undesirable strip development and more intense commercial development could be generated adjacent to the intersections with an arterial roadway</li> <li>• An arterial roadway would tend to transform the character of a community of a medium-density nature to a more urban nature</li> </ul> <p><b>Homeland Security</b></p> <ul style="list-style-type: none"> <li>• A highway is needed that can provide high quality, uninterrupted flow between government facilities and access to hospitals and to aid in an area evacuation is crucial to national security</li> </ul>

Suggested Alternative	Summary of SHA Thinking Prior to the Alternatives Workshop
	<p><b>Summary</b></p> <ul style="list-style-type: none"> <li>• The concept of an arterial roadway is recommended to not be studied further</li> <li>• Many of the alignment options of MM 198 will be carried forward as part of the Corridor 2 alternatives (see #16)</li> <li>• The end points of MM 198 are being modified to more directly connect to I-270 and I-95 with a higher quality new interchange</li> </ul>
<p><b>Construct Two Separate East and West Highway Links:</b> An alternative that includes three separate links – two access controlled highways between I-370 and MD 97 and between US 29 and US 1 and the widening of MD 28/MD 198</p>	<p>A combination of highway links and an arterial roadway would have the same deficiencies in addressing the ICC Purpose and Need as described in the discussion of the M-NCPPC Hybrids and the UERA, including placing more traffic on local roads and arterials that, even with the improvements, would remain heavily congested. Two separate east and west highway links would not address the purpose and need of this project.</p> <p><b>Community Mobility and Safety/Movement of Goods and People to and From Economic Centers</b></p> <ul style="list-style-type: none"> <li>• As part of the MD 28/MD 198 study, a traffic study was conducted to determine if the three links had independent utility. The study showed that the segment between I-370 and MD 97 did not have independent utility because of adverse affects to MD 28/MD 198. The traffic study included a scenario consisting of the western and eastern highway links, plus improvements to MD 28/MD 198. The study showed that these improvements would provide some network traffic relief, but would also increase travel on several key locals roads, such as Ednor Road, Bonifant Road, Fairland Road, and Musgrove Road.</li> <li>• A disjointed east-west connector would not serve the need to provide high quality east-west link between I-270 and I-95/US 1. As with the UERA and MM 198 alternative, this alternative would place more traffic on local roads and arterials with several signalized at-grade intersections and uncontrolled access that, even with improvements, would not provide a continuous movement between economic centers.</li> <li>• Drivers would not experience the improved mobility across the counties and reduced delay and safety that they would with a controlled access highway. To transition from the highway links to the center link (i.e., MD 97 to US 29), motorists would have to switch back and forth between highway and arterial conditions, necessitating changes in speeds and driver expectations.</li> </ul>

Suggested Alternative	Summary of SHA Thinking Prior to the Alternatives Workshop
<b>Corridor 1</b>	<p>Corridor 1 generally follows the alignment of the Master Plan Alternative studied in the 1997 DEIS. However, the alternatives to be developed in this corridor will reflect significant differences in the footprint and design features to reduce impacts from the alternatives previously developed. Options for ending the ICC at I-95 will also be evaluated in this corridor.</p> <p>The Study Team recommends that Corridor 1, with various alignment options, <b>should be carried forward for detailed study.</b></p>
<b>Corridor 2</b>	<p>Corridor 2 essentially follows the corridor of the Northern and Midcounty/MD 198 (MM198) alternatives studied in the 1997 DEIS, but with changes to reflect this project's Purpose and Need. Alternatives in Corridor 2 will seek to include the best alignment opportunities from both of the 1997 alternatives to reduce environmental impacts and to respond to development that has occurred since the last study. Alternatives in Corridor 2 will incorporate a generally smaller footprint than the previous Northern Alternative, and will include limited access and less impactful design features consistent with this Purpose and Need. Options for ending the ICC at I-95 will also be evaluated in this corridor.</p> <p>The Study Team recommends that Corridor 2, with various alignment options, <b>should be carried forward for detailed study.</b></p>

## **D. Study Area Definition**

Following the scoping meetings and initial screening of alternatives, the project's Study Area was defined, extending from I-270 to I-95/US 1 and from I-495 (Capital Beltway) to the Patuxent River (See Figure IV-1). Please note that the Study Area shown in Figure IV-1 is primarily for evaluating the highway element of the project. The Study Area for the Secondary and Cumulative Effects Analysis of the alternatives extend beyond the area outlined in Figure IV-1.

## **E. Summary of SHA's Thinking Going into the Alternatives Public Workshops**

Using the screening process outlined above, the Study Team evaluated the 17 alternatives described previously and their ability to substantially meet the project Purpose and Need. The alternatives were presented at the Alternatives Public Workshops along with a summary of SHA's thinking on the elements of purpose and need that could be or not be satisfied with the alternative (see Alternatives Screening Summary Matrix above). Four of the elements of need (Community Mobility and Safety, Movement of Goods and People to and from Economic Centers, Local Land Use, and Homeland Security) were used to screen all suggestions. Although not a deciding factor, Environmental Stewardship, the fifth element of purpose and need, will continue to be analyzed as alternatives are developed.

Consequently, SHA's thinking prior to and following the Alternatives Public Workshops, which was subject to public review and agency comment, was that the alternatives listed below would not be carried forward for detailed study because they do not substantively address all or part of the project Purpose and Need:

- Improve I-495
- An Auto-Train Route
- Alignment or Alternative Option to extend ICC west of I-270 and/or east of US 1
- Alignment or Alternative Option to construct a roadway from I-270/Falls Road to the Master Plan Alternative at MD 97 in lieu of building Master Plan Alignment between I-370 and MD 97
- Alignment or Alternative Option to move the ICC south of all other alternatives
- Build I-95 to continue through the District of Columbia
- Transportation Systems Management/Travel Demand Management (TSM/TDM) Alternative (synchronizing traffic signals, improving transit, telecommuting, bicycles, transit-oriented development and better land use)
- Upgrade Existing Roads Alternative
- Transit-Only Alternative (options that only include transit systems such as a new light rail or commuter rail system on a dedicated transitway to connect origins and destinations in the I-270 and I-95 corridors)
- Howard County Connection Alternatives (I-270 to I-95 utilizing MD 216, MD 32 or MD 100)
- Balanced Land Use and Enhanced Transit Alternative
- Combined Balanced Land Use and Enhanced Transit Alternative

- Hybrid Alternatives (combinations of fully access controlled highway with interchanges and arterial roadways with at-grade intersections)
- Midcounty Highway-MD 198 (MM198) Alternative from the 1997 DEIS
- Construct Two Separate East and West Highway Links.

The alternatives called Corridors 1 and 2 were recommended for further study because additional information would be needed to determine if they do, in fact, meet the project Purpose and Need.

## **F. Alternatives Public Workshops**

### **1. Information Presented**

The ICC Study Team held three Alternatives Public Workshops in November 2003. The purpose of the Alternatives Public Workshops was to present the results of the preliminary alternatives evaluation and the environmental data collection and to receive feedback.

Information presented at the workshops included:

- The purpose of the study
- The evaluation of preliminary alternatives
- The Study Team's current thinking on alternatives to be carried forward into detailed study
- The Study Team's current thinking on alternatives to be dropped from further consideration
- The environmental and community issues identified throughout the Study Area, and how the Study Team proposes to address them

The Alternatives Public Workshops were conducted in an interactive open-house format to promote interaction between the Study Team and the public. Project information stations related to specific topics and alternatives were set up throughout the meeting room. Three 18-foot-long aerial photography maps showed locations of the corridors that the Study Team believed should be studied further. Members of the Study Team were available to answer questions, record comments and discuss the project. Participants were encouraged to submit their thoughts on comment cards. Space and tables were provided near the entrance for private groups to set up displays and distribute literature covering a wide range of viewpoints.

The Study Team made a concerted effort to involve as many people as possible with the workshops. More than 100,000 postcards were mailed to announce the meetings. A 12-page project booklet was prepared and mailed to more than 13,000 households. These booklets and other literature were available at 25 Information Centers located in libraries, community centers and other locations across the Study Area. A news briefing was held to publicize the meetings and received good media coverage. The project website, [www.iccstudy.org](http://www.iccstudy.org), continued to serve as the most comprehensive source of study information. Those who could not attend the meetings could review all displays and handouts on the website in a "virtual workshop." Comments submitted via the website were encouraged.

The three workshops were held across the Study Area, with two meetings in Montgomery County and one in Prince George's County. The Study Team took additional steps to make it easier for people to participate, including extended hours. A total of 1,230 people attended and 749 comment cards were received (including those received through the mail and project website) between November 1, 2003 and December 6, 2003. The workshops were held on the following dates and locations:

Thursday, November 13, 2003  
American Legion, Post 60  
2 Main Street  
Laurel, MD  
2:00 p.m. – 8:30 p.m.  
Attendance: 220

Saturday, November 15, 2003  
James Blake High School  
300 Norwood Road  
Silver Spring, MD  
9:00 a.m. – 2:00 p.m.  
Attendance: 800

Wednesday, November 19, 2003  
Bohrer Park Activity Center  
506 S. Frederick Avenue  
Gaithersburg, MD  
2:00 p.m. – 8:00 p.m.  
Attendance: 210

## **2. Comments Received**

The Study Team members evaluated and considered the comments received as they made a determination on the alternatives that should be retained for more detailed study. At this stage of the study, what was of particular interest were issues raised by the public that could alter the Study Team's thinking on alternatives retained for detailed study. Other issues that highlight needs and concerns will be used by the Team as it proceeds with more detailed study.

What follows are the issues mentioned most often on comment cards received at the workshops, through the mail, and on the website. Many cards cited more than one issue, which are listed here separately. Staff members also summarized facilitator notes to provide additional meaning and perspective.

In descending order, the following issues were mentioned most often on the comment cards received:

Issue A: Adhere to Master Plan when determining corridor location



Issue B: Improve mass transit

Issue C: Concern over impacts to the natural environment

Issue D: Concern over community impacts

Issue E: Concern over project cost

Issue F: Concern over whether alternatives recommended to be retained will improve congestion

Issue G: Improve existing roads

Issue H: Build a continuous trail for bicycles and pedestrians

Issue I: Connect Corridor 2 to I-95 with a more northerly terminus.

In general, the comments indicate that opinions still differ widely on various aspects of the project. Issues A, B and H were commonly mentioned at all three meetings. Citizens in Laurel expressed support for ending the ICC at I-95, rather than US 1, to avoid adding traffic to US 1 and other congested local roads. Many citizens in Silver Spring cited concerns about the sensitive stream valley parks in the Study Area. Citizens in Gaithersburg expressed support for mass transit and accommodations for bicycles and pedestrians, and for addressing congestion in the Study Area. By far, the issue most often expressed on Project Web Site was Issue H (continuous trail for bicycles and pedestrians), followed by Issue A (preference for Master Plan corridor).

The Study Team considered all comments from the public and while significant concerns were raised which will continue to be considered throughout this study, the Study Team maintains its thinking that additional study is necessary to evaluate the following three alternatives: No-Action, Corridor 1, and Corridor 2. As the Study continues, these three alternatives will be evaluated in much more detail. Working with federal, state, and local agencies, the Study Team will identify key issues, resolve concerns, develop cost estimates, and determine how transportation needs can best be met. Additional public comment may be received through the website, e-mail, and phone.

As presented at the workshops, the ICC alternatives include mass transit options in the form of a number of express bus routes serving METRO/MARC Rail stations in the Study Area. With a focus on avoiding and minimizing impacts, the Study Team will continue to perform comprehensive environmental analyses of the ICC, based on inventories of stream valley parks and sensitive watersheds; existing and planned neighborhoods, recreation areas, and other social resources; and potentially affected historic structures and archeological sites.

Further, the Study Team will evaluate the effect of the ICC alternatives on approximately 45 intersections, including those that have been improved as part of State Highway Administration's

Congestion Relief Studies. Most importantly, the Study Team is committed to keeping the public involved during the remainder of this study.

## **IV. RECOMMENDATIONS FOR ALTERNATIVES RETAINED FOR DETAILED STUDY**

### **A. General**

As a result of preliminary planning analyses and public comments generated from the November 2003 Alternatives Public Workshops, the SHA recommends the alternatives and options presented in this section be retained for detailed study. These alternatives and options are recommended for detailed study because additional information is required to determine which one best addresses the project's purpose and need while balancing concerns for an environmentally sensitive transportation improvement. More detailed analysis will be done to determine the engineering feasibility of these alternates and options. Detailed environmental analyses will also be completed.

Three basic alternatives are recommended for detailed study:

#### **1. No-Action**

The No-Action (or No-Build) Alternative is recommended because it serves as a baseline scenario to compare with the build alternatives and is required by law to be studied throughout the NEPA and Section 404 processes. With the No-Action Alternative, no substantial improvement would be made to east-west transportation facilities beyond those improvements included in the Metropolitan Washington Council of Governments' (MWCOC) Constrained Long Range Transportation Plan. Minor intersection, interchange and roadway improvements to address localized problems would continue to occur as well as routine maintenance projects. Measures to reduce travel demand, such as more transit and vanpool incentives, would also occur.

#### **2. Corridor 1 (see Figure IV-1)**

This Corridor follows the general alignment set for the ICC by Montgomery and Prince George's counties in their master plans. The alternative extends from I-370/I-270 near Shady Grove to I-95/US 1 south of Laurel. Several alignment and interchange options would be considered (including an option to terminate the ICC at I-95) and are discussed in Sections IV-D, IV-E, and IV-F.

#### **3. Corridor 2 (see Figure IV-1)**

This corridor extends from I-370/I-270 near Shady Grove to I-95/US 1 south of Laurel. From I-370 to MD 97 (Georgia Avenue) this corridor is identical to Corridor 1. However, at MD 97, it curves to the northeast and continues to the north side of MD 198, crossing to the south side of MD 198 near the Montgomery County/Prince George's County line and rejoining Corridor 1 on the west side of I-95. From the west side of I-95 to US 1, Corridor 2 is identical to Corridor 1. As with Corridor 1, several alignment and interchange options would be considered (including an option to terminate the ICC at I-95) and are discussed in Sections IV-D, IV-E, and IV-F.

## **B. Design Elements**

The basic design elements of the ICC include the following (see **Figure IV-2**):

- Limited access multi-modal highway with a 60-mile-per-hour design speed
- Six basic lanes (three per direction) between I-270 and I-95 and four to six lanes between I-95 and US 1.
- Variable typical sections, with a median of variable width (varying from 30 feet in especially sensitive areas to 50 feet, depending upon sight distance and stormwater management requirements); guardrails, retaining walls and other roadside treatments to reduce the footprint are included.
- Noise barriers and screening where warranted
- Variable treatments for stormwater management
- Landscaping
- Minimized impact in park areas, using minimal cut, long bridges at major stream crossings and sensitive construction techniques
- Hiker-biker trails where appropriate to complement nearby existing trails, either along the ICC alignment or nearby (within or outside the ICC right-of-way.)
- Intelligent Transportation Systems, such as variable message signs
- Tolls.

## **C. Bus Service**

The ICC will be a new access controlled managed facility that provides an opportunity for east-west transit service, including bus service as part of both the Corridor 1 and Corridor 2 alternatives. New express bus routes, which might be implemented, are being evaluated. These bus routes would serve:

- Shady Grove METRO – Greenbelt METRO
- Shady Grove METRO – Muirkirk and South Laurel MARC
- Columbia – Shady Grove METRO
- Rockville METRO – Muirkirk MARC
- Burtonsville – Greenbelt METRO
- Glenmont METRO – Shady Grove METRO/Shady Grove Adventist Hospital.

## **D. Alignment Options (see Figure IV-3A through IV-3E)**

In several areas, alignment options in Corridors 1 and 2 were developed and presented at the Alternatives Public Workshops. Considering comments received from the public and resource agencies, the following recommendations regarding alignments to be retained and dropped have been developed.

**1. Alignment Options Recommended to be Retained for Detailed Study**

The following alignment options are recommended to be retained for detailed study because they are functionally equivalent to and have less impact than the options recommended to be dropped.

**a. Corridors 1 and 2 West of MD 97 (Georgia Avenue)**

**Rock Creek Option A**

Rock Creek Option A is recommended to be retained for detailed study because it generally follows the Montgomery County master plan alignment and has fewer wetland and floodplain impacts than does Rock Creek Option B, located approximately 300 feet upstream.

**Rock Creek Option C**

Rock Creek Option C is recommended to be retained for detailed study because it has substantially less impact to Rock Creek Regional Park than does Option A (5.6 vs. 28.1 acres), and thus serves as a U.S. DOT Act Section 4(f) minimization option. However, it does have substantial impact to the Cashell Estates and Winters Run communities (approximately 13 to 17 home displacements). The park and community impacts of both Rock Creek Options A and C will be studied in detail.

**b. Corridor 1 East of MD 97**

**Northwest Branch Options A and B**

Northwest Branch Options A and B are both recommended to be retained for detailed study. Northwest Branch Option A minimizes impacts to the natural environment in Northwest Branch. Option B minimizes Section 4(f) impacts in Northwest Branch.

**Paint Branch Option A**

Paint Branch Option A is recommended to be retained for detailed study because it generally follows the Montgomery County master plan alignment and crosses the Good Hope Tributary at a narrower floodplain than does Paint Branch Option B, and it is less expensive than Paint Branch Option B, as it avoids the Montgomery County DPWT Maintenance Facility.

**c. Corridor 2 East of MD 97**

**Norbeck Options A and B**

Norbeck Options A and B are both recommended to be retained for detailed study. Option A has the advantage of avoiding the Trotters Glen Golf Course and thus may be

substantially less expensive than Option B, which requires the acquisition of a portion of the Course. However, Option A displaces several residences and crosses Batchellors Run. Both options will be refined and evaluated in detail.

### **Spencerville Options A, B, C and D**

All four options in Spencerville – A, B, C, and D – are recommended to be retained for detailed study. All have significant impacts (e.g. residential displacement, church/school displacement, community disruption, historic resources) but no one is clearly superior to the others in terms of overall impact and cost. Furthermore, while one or two could possibly be dropped if only one Burtonsville Option were being carried forward (e.g., Spencerville Option D does not connect to Burtonsville Option A, and thus could be dropped if Burtonsville Option A were not being carried forward), both of the Burtonsville Options are recommended to be carried forward. Thus, all four Spencerville Options will be retained and evaluated in detail.

### **Burtonsville Options A and B**

Burtonsville Options A and B are both recommended to be retained for detailed study. Option A has the advantage of avoiding several parks and streams that flow to the Duckett Reservoir as well as the Batson Road community. Option B has the advantage of avoiding the right fork of Paint Branch as well as the Thompson Road and Peach Orchard Road communities. Both options will be retained and evaluated in detail.

### **Fairland Options A and B**

Fairland Options A and B are both recommended to be retained for detailed study. Fairland Option A has the advantage of less wetland impact, while Option B has the advantage of being further away from the Birmingham Drive community and possibly has fewer forest impacts. Both options will be refined and evaluated in detail.

## **2. Alignment Options Recommended to be Dropped from Further Study**

### **a. Corridors 1 and 2 West of MD 97 (Georgia Avenue)**

#### **Rock Creek Option B**

Rock Creek Option B has similar parkland impacts to Option A, but crosses the Rock Creek floodplain at a much wider location (920-feet-wide vs. 470-feet wide). To make the impacts to the floodplain and wetlands approximately equal to those associated with Option A, Option B would require a bridge 335-feet longer than Option A, at an additional cost of \$11.5 million.

### **b. Corridor 1 East of MD 97**

#### **Paint Branch Option B**

Paint Branch Option B differs from Paint Branch Option A in two principal ways: Option B would displace at least a portion of the Montgomery County DPW&T Maintenance Facility located on Cape May Road whereas Option A would not, and Option B crosses Good Hope Tributary (the principal brown trout spawning area in the Paint Branch System) at a wider area of the floodplain than would Option A. Option B thus has more impact than Option A on wetlands (0.5 acre vs. 0.3 acre) and 100-year floodplain (1.0 acre vs. 0.1 acre). During a field review with representatives of the federal and state environmental resource agencies in October 2003, all agreed that Paint Branch Option A was preferable to Paint Branch Option B.

## **E. Interchanges**

The interchange locations recommended to be studied as part of Corridors 1 and 2 are shown on Figure IV-3 and summarized below. All will be evaluated in detail to determine the design constraints at these locations.

<b>Corridor 1</b>	<b>Corridor 2</b>
MD 355	MD 355
Shady Grove METRO Access/Shady Grove Road <sup>1</sup>	Shady Grove METRO Access/ Shady Grove Road <sup>1</sup>
Shady Grove Road south of Epsilon Drive <sup>1</sup>	Shady Grove Road south of Epsilon Drive <sup>1</sup>
MD 97	MD 97
MD 182	MD 182
MD 650	MD 650
US 29	US 29
Briggs Chaney Road <sup>2</sup>	Contee Road
A-59	I-95
I-95	Virginia Manor Road
Virginia Manor Road	

<sup>1</sup> The partial interchange shown at the Alternatives Public Meeting at Shady Grove Road south of Epsilon Drive may be eliminated, depending upon results of travel demand forecasts and level of service analysis. Likewise, the interchange configuration at Shady Grove METRO Access/Shady Grove Road may be modified.

<sup>2</sup> Corridor 1 is being developed assuming an interchange at Briggs Chaney Road; however, an option without this interchange will be considered.

Corridors 1 and 2 are being developed assuming an at-grade intersection at US 1. If travel demand forecasts and level of service analysis indicate a need, an interchange option will be considered. Corridor 1 is being developed assuming no interchange at MD 182 (Layhill Road); however, an option to include an interchange at MD 182 as part of Corridor 1 will be considered in response to local agency interest. Alternative interchange configurations will be evaluated as the study progresses. In addition, the compatibility of the ICC with proposed M-83 (extension of Midcounty Highway) will be determined.

## **F. I-95 Terminus Option**

It is recommended that an option be studied that terminates the ICC at I-95, under both Corridors 1 and 2. All of the interchanges would be as described in the previous section, except that there would be no at-grade intersection at US 1. Studying two termination options (I-95 and US 1) will give a range of the impacts and operational issues associated with terminating the ICC at a location between I-95 and US 1, such as MD 201 Extended.

## **G. Specific Issues**

During the course of engineering and environmental studies to be conducted in preparation for the DEIS, numerous refinements will be developed and considered to avoid and minimize impacts. These refinements, which are in addition to alternative interchange configurations and the alignments options presented in Sections IV-D and IV-E above, include, but are not limited to, those listed below and shown on Figure IV-3.

### **1. Corridors 1 and 2: I-370 to MD 97 (See Figure IV-3A)**

- Shifts retaining wall or other means to avoid business displacements on the north side of I-370 east of MD 355
- Alternative access routes for Cashell Estates and Winters Run communities under Rock Creek Option C

### **2. Corridor 2: MD 97 to I-95 (See Figures IV-3D and IV-3E)**

- Alternative means of access for Willow Grove community under Norbeck Option B
- Alternative means of access for residences along Mt. Everest Lane north of Norbeck Option A
- Alternative crossing of MD 182 (Layhill Road)
- Alignment shift northeast of Nursery Run

## **H. Toll Issues**

NEPA provides a process for evaluating “reasonable” alternatives. Non-toll build alternatives are being dropped from further consideration as Alternatives Retained for Detailed Study. The following paragraphs discuss whether non-toll alternatives are “reasonable:”

- Preliminary estimates, which will continue to be refined, indicate a cost to implement an ICC to be between \$1.5 and \$2.0 billion. A cost of this magnitude requires that one evaluate “cost-effective” alternative financing options, including tolls.
- The Maryland Transportation Trust Fund (TTF) is not currently funded, nor is it expected to be funded at a level that could provide the sufficient funds to construct the ICC without a substantial adverse impact on the Department of



Transportation's ability to address transportation needs throughout the state. Throughout the Study Area, the need for congestion relief continues to increase. In addition, there are numerous other transportation needs around the State that must be addressed. Therefore, alternative funding sources, including toll revenue bonds, must be considered for the construction of the ICC.

- Congestion management has become an issue of statewide and regional importance, as funds to provide additional capacity are limited. Congestion management is a key goal of the ICC based on lessons learned from the Federal Highway Administration's (FHWA) Value Pricing Pilot Program and from many studies around the country and the world; the use of tolls is a feature for achieving this goal. Managing congestion through value pricing consists of charging drivers a fee that varies with the level of traffic on a congested roadway to more economically and efficiently use the roadway facility. Value pricing is a concept that results in congestion management and environmental benefits by providing enhanced travel choices using monetary incentives.

It is anticipated that demand to use the ICC will exceed the capacity of the roadway. Variably priced tolls can provide an effective means of achieving the goal of managing traffic demand to more desirable levels of service.

## **I. Environmental Resources**

Environmental resources within the ICC Study Area have been identified through the preliminary stages of the ICC project planning process. These resources are described below for each corridor recommended for detailed study:

### **1. Corridor 1**

Corridor 1 crosses several streams and associated tributaries. These streams include Mill Creek, Rock Creek, North Branch, Northwest Branch, Good Hope, Paint Branch, Little Paint Branch and Indian Creek. Impacts to these streams potentially affect water quality and aquatic habitat within the watersheds. In addition, the Upper Paint Branch watershed has been designated by Montgomery County as a Special Protection Area (SPA) for its high water quality and self-sustaining trout fishery.

The majority of the larger streams and their associated riparian buffers have been preserved as parks. Corridor 1 would impact several stream valley and regional parks with associated streams, floodplains, wetlands, forests, forest interior habitat and rare, threatened or endangered species habitats. These parks include Mill Creek Stream Valley Park, Rock Creek Regional Park, North Branch Stream Valley Park, Northwest Branch Stream Valley Park, Fairland Regional Park and Little Paint Branch Stream Valley Park.

Thirteen parks and/or recreational facilities exist within close proximity of Corridor 1. These parks offer a diverse range of activities, such as picnic areas, baseball/softball fields, tennis courts, play equipment, hiking trails and ponds. Parks located within close proximity to Corridor 1 include (see **Figure IV-4**):

- Mill Creek Stream Valley Park
- Redland Local Park
- Rock Creek Regional Park
- Rock Creek Stream Valley Park
- North Branch Stream Valley Park
- Olney Manor Recreational Park
- East Norbeck Local Park
- Layhill Local Park
- Northwest Branch Recreational Park
- Northwest Branch Stream Valley Park
- Upper Paint Branch Stream Valley Park
- Dr. Charles R. Drew Elementary School
- Tanglewood Neighborhood (not Local) Park
- a new park being added in the Cross Creek subdivision
- Little Paint Branch Stream Valley Park

There are a number of communities located within the project Study Area. Housing types within these communities include apartments, townhomes, condominiums and single-family homes. Communities located within close proximity of the proposed Corridor 1 include:

- Tanglewood
- Fairland Heights
- Greencastle Manor
- Fairland Estates
- North Sherwood Forest
- Drumeldra Hills
- Colesville Farm Estates
- Wilson Hills
- Longmead
- Sycamore Acres
- Brooke Manor
- Muncaster Mill View
- Cashell Estates
- Winters Run
- Needwood Estates

Several National Register of Historic Places (NRHP) eligible historic properties exist within the Study Area. Further identification and evaluation of these sites will continue as the project progresses. Sites within close proximity to Corridor 1 include:

- Casey Barn
- Redland Rd. Bridge over Mill Creek (Bridge M56)
- Cashell Farm property
- White's Hardware
- Howard Marlow
- Lacy Shaw House
- John Norton House
- John Norton House

Further identification and evaluation of historic properties, including archeological resources, will continue as project planning progresses, in consultation with the Maryland Historical Trust.

## 2. Corridor 2

Corridor 2 would cross several streams and associated tributaries and parks. These streams include Mill Creek, Rock Creek, North Branch, Batchellor's Run, Bryants

Nursery Run, Northwest Branch Stream Valley Park, and tributaries to the Patuxent River and Paint Branch, Little Paint Branch and Indian Creek. Impacts to these streams potentially affect water quality and aquatic habitat within the watersheds. The Patuxent River tributaries are particularly sensitive due to the down stream proximity to the Rocky Gorge Reservoir. The Upper Paint Branch Special Protection Area is also located within the area.

The majority of the larger streams and their surrounding riparian buffers have been preserved as parks. Corridor 2 would impact several stream valley and regional parks with associated streams, floodplains, wetlands, forests, forest interior habitat and rare, threatened or endangered species habitats. These parks include Mill Creek Stream Valley Park, Rock Creek Regional Park, North Branch Stream Valley Park, Northwest Branch Park, Patuxent River Watershed Conservation Park and T. Howard Duckett Watershed Property.

The Study Area also contains linear parks that are oriented in a north/south direction across the entire Study Area. Thirteen parks and/or recreational facilities exist within close proximity of Corridor 2. These parks offer a diverse range of activities, such as picnic areas, baseball/softball fields, tennis courts, play equipment, hiking trails and ponds. Parks located within close proximity to Corridor 2 include (see **Figure IV-4**):

- Mill Creek Stream Valley Park
- Redland Local Park
- Rock Creek Regional Park
- Rock Creek Stream Valley Park
- North Branch Stream Valley Park
- Olney Manor Recreational Park
- Red Door Store Special Park
- Northwest Branch Recreational Park
- Hampshire Greens Golf Course Browns Corner Neighborhood Conservation Area
- Upper Paint Branch Stream Valley Park
- Patuxent River Watershed Conservation Park
- Burtonsville Local Park

There are a number of communities located within the project Study Area. Housing types within these communities include apartments, townhomes, condominiums and single-family homes. Communities located within close proximity of the proposed Corridor 2 include:

- Burtonsville
- Spencerville Knolls
- Parrs Ridge
- Spencerville
- Browns Corner
- Norwood Estates
- Hampshire Greens
- Norbeck Knolls
- Norwood Village
- Anscroft
- Sycamore Acres
- Brooke Manor
- Muncaster Mill View
- Ashton
- Sandy Spring
- Cashell Estates
- Winters Run
- Needwood Estates

Several National Register of Historic Places (NRHP) eligible historic properties exist within the Study Area. Further identification and evaluation of these sites will continue as the project progresses. Sites within close proximity to Corridor 2 include:

- Cashell Farm property
- White's Hardware
- Woodburn
- Willow Grove
- Holland Store/House
- Amersley
- Llewellyn Fields
- Pleasant View Farm
- Alloway Site & Cemetery
- Oak Hill
- Phair Property
- Drayton
- Joseph Harding House
- Edgewood II
- Spencer/Carr House
- Duvall/Kruhm House
- George Bennett House
- Free Methodist Church Camp Meeting Ground
- Columbia Primitive Baptist Church
- Burtonsville Lookout Tower
- Isaac Burton Jr. House

Further identification and evaluation of historic properties, including archeological resources, will continue as project planning progresses, in consultation with the Maryland Historical Trust.

## **J. Environmental Stewardship**

### **1. Purpose and Definition**

Transportation improvement alternatives for the ICC will continue to be developed in an environmentally sensitive manner using state of the art measures to avoid, minimize and mitigate (unavoidable) impacts. Additionally, environmental stewardship packages will be developed for each build Alternative Retained for Detailed Study (ARDS) focusing on the restoration/re-creation of resource functions and values impacted by past development. The goal of Environmental Stewardship (ES) is to improve aspects of the natural, cultural and human environments by identifying opportunities that improve, protect, preserve or enhance those resources in the ICC project area. ES is also a component of the ICC Purpose and Need.

The ES packages developed for each build alternative will address existing environmental needs, offset negative environmental impacts unrelated to the ICC project and will provide improvements to the surrounding natural and human environments. The ES packages will also provide environmental improvements independent of regulatory requirements to mitigate for any direct impacts of the ICC. The ES packages will also reflect the types of resources unique to that alternative.

### **2. Needs**

Needs associated with environmental stewardship identify the general goals for improving natural and human resources in the Study Area, but do not identify specific sites/locations or opportunities that address these needs. SHA has developed priority resource needs specific to each sub-watershed for the natural environment and to each planning area for the human/cultural environment for each corridor. These priority needs are based on both agency and public input. These needs were developed in conjunction with agencies and the public, and have preliminarily been determined to be most effective in meeting the ICC's ES goals.

A description of ES Priority Needs for Corridors 1 and 2 is shown in Subsection 4 below. A general description of needs within the sub-watersheds and planning areas follows.

#### **a. Corridor 1**

**Natural Environment** – Environmental stewardship needs for the natural environment focuses on enhancements/improvements at the sub-watershed level. Corridor 1 extends through the following five sub-watersheds:

- Paint Branch
- Northwest Branch
- Rock Creek
- Indian Creek
- Little Paint Branch

Based on agency input, it has been determined that the condition of Study Area sub-watersheds can be directly correlated to water quality, which has diminished over time due to higher levels of development and associated land use changes. Therefore, the rationale for improving sub-watersheds should be focused on improving water quality. The following ES needs have been identified for improving water quality: decreasing sediment inputs from stream bank erosion, protecting forested areas, removing toxic inputs into streams, improving stormwater management in neighborhoods and maintaining coldwater fisheries in the upper and lower Paint Branch. The priority needs proposed for each sub-watershed (for both corridors) are listed in Subsection 4 below.

**Human/Cultural Environment** – Environmental stewardship needs for the human and cultural environments focus on improvements at the master planning area level. Corridor 1 extends through the following nine master plan boundaries:

- Gaithersburg and Vicinity/Shady Grove Sector
- Upper Rock Creek
- Olney
- Aspen Hill
- Cloverly
- Fairland
- Fairland/Beltsville and Vicinity
- Northwestern Area

The focus within Corridor 1 is on improving neighborhoods/communities and parklands, along with addressing traffic concerns and transit access. Needs identified for Corridor 1 include improving/adding pedestrian access, bicycle/pedestrian paths, enhancing/improving cultural resources, parklands and landscaping within particular communities. The priority needs proposed within each master plan boundary (for both Corridors 1 and 2) is listed in Subsection 4 below.

## **b. Corridor 2**

**Natural Environment** –Environmental stewardship needs for the natural environment also focuses on enhancements/improvements at the sub-watershed level. Corridor 2 extends through or partially through the following six sub-watersheds:

- Paint Branch
- Northwest Branch
- Rock Creek
- Indian Creek
- Little Paint Branch
- Patuxent

The rationale for improving sub-watersheds for Corridor 2 is similar to Corridor 1 and is based mainly on improving water quality, which has diminished over time due to development and

associated land use changes. Needs identified for Corridor 2 include identifying existing areas of impervious surface that could be removed, preserving/maintaining existing streams with improved biotic conditions, increasing/preserving/protecting forested areas, wetlands and riparian buffers, removing toxic inputs into streams, reducing storm water peak flows and protecting water quality for the Rocky Gorge reservoir.

**Human/Cultural Environment** –Environmental stewardship needs for the human and cultural environments also focuses on improvements at the planning area level. Corridor 2 extends through or partially through the following five planning areas:

- Gaithersburg and Vicinity
- Upper Rock Creek
- Olney
- Cloverly
- Fairland
- Fairland/Beltsville and Vicinity
- Northwestern Area.

The focus within Corridor 2 is on improving neighborhoods/communities and parklands, enhancing/improving cultural resources, and addressing specific Environmental Justice community enhancement needs. Needs identified for Corridor 2 include improving/adding bicycle/pedestrian access, improving sidewalks and landscaping within communities, restoration of historic structures and park enhancements.

### **3. Solutions and Opportunities**

Environmental stewardship solutions are those specific strategies that address the priority needs and include, but are not limited to, the following examples:

- Restore degraded and concrete-lined stream channels
- Provide new or retrofit existing storm water management facilities
- Implement improved storm water management practices
- Plant forest areas and establish wetland sites and riparian buffers
- Improvements to Meadowside Nature Center
- Improvements to Laytonia Recreational Park
- Connect ICC bike paths with existing trails
- Improve pedestrian/bicycle access along MD 97.

Environmental stewardship opportunities are the specific site and/or location improvements that address the “solutions” proposed to address the priority needs, therefore satisfying the project Purpose and Need of improving the existing environment. As individual opportunities are identified, project stakeholders, including resource agencies, local governments and the public, will provide input that will be considered in the ranking process. The opportunities identified to address the needs developed for this project will be ranked using the following criteria:

- Benefit
- Resource Impact
- Severity of Need
- Technical/Engineering Feasibility
- Cost
- Relevance to ICC Corridor.

Opportunities will be identified through a detailed review of the Study Area, interaction with the public and coordination with local, state and federal agencies. Other sources will include documentation developed by local governments and other resource-based organizations describing existing restoration or environmental stewardship opportunities within the Study Area.

#### **4. Identification of Priority Needs and Solutions for the Proposed ARDS**

**Appendix A** includes a preliminary summary of priority needs and proposed solutions (by alternative) for both the natural and human/cultural environments. The next phase of the study will include selection of the ES opportunities for each solution that best address the priority needs for each alternative. The needs and solutions summary also includes the number of opportunities preliminarily identified for each sub-watershed and planning area.



## V. NEXT STEPS

Project team coordination in early 2004 will involve evaluation of the Preliminary Alternatives and recommendation/selection of ARDS. The evaluation will include:

- Determination of how well each alternative addresses the Project Purpose and Need and other measures of effectiveness (to be defined) based on detailed technical studies including travel demand forecasts (see **Appendix B** for a discussion of travel demand forecasts)
- Screening of alternatives involving recommendation of ARDS and elimination of preliminary alternatives based on the above criteria.

SHA will begin detailed studies upon the selection of ARDS. The Project Team will conduct technical environmental analyses on the ARDS and develop technical reports for all aspects of the human, cultural and natural environments. These include the following:

- Human – communities, community facilities, parklands, businesses and commercial facilities, historic and archeological resources, air and noise quality
- Natural – woodlands, floodplains, wetlands, streams, rare/threatened/endangered species (RTE), fish and wildlife, hazardous waste assessment.

During the detailed studies, the Project Team will continue agency coordination to develop environmental stewardship strategies for both corridors. The Draft Environmental Impact Statement (DEIS)/Draft Section 4(f) Evaluation will be prepared in the spring of 2004. The document will also serve as the preliminary Section 404 Permit Application.

Public Open Houses will be held in late spring or early summer of 2004. These Open Houses will serve as intermediate public meetings to obtain public review/comment on the preliminary engineering design and environmental technical studies prior to the completion of studies and circulation of the DEIS.

The DEIS will be circulated for distribution to federal, state, and local agencies (and available for public review) in the fall of 2004, at which time a DEIS comment period will begin. A Public Hearing will be held in December 2004. The Hearing will provide an opportunity for the public to provide written comments or testimony on the DEIS/Draft Section 4(f) Evaluation. The hearing will be conducted jointly with the ACOE as part of its Section 404 process.

In early 2005, the Project Team will address public and agency comments on the DEIS/ Draft Section 4(f) Evaluation. Following the close of the comment period, SHA will request concurrence from the Federal Highway Administration (FHWA) on a preferred alternative. Concurrence will also be requested from FHWA on environmental stewardship measures and on conceptual enhancement/mitigation strategies related to the recommended preferred build alternative. Subsequently, agency concurrence on the preferred alternative along with conceptual mitigation for that alternative will be sought from the ACOE and MDE. Comments on the

preferred alternative and conceptual mitigation will be sought by all of the participating Interagency Working Group (IAWG) agencies.

Upon selection of a preferred alternative, preparation of the Final Environmental Impact Statement (FEIS)/Final Section 4(f) Evaluation will begin (early 2005). The FEIS/Final Section 4(f) Evaluation will document design changes/refinements since the DEIS, disclose environmental impacts associated with the preferred alternative, address agency and public comments, and document mitigation, stewardship, and other project commitments. The FEIS/Final Section 4(f) Evaluation will be circulated in late winter or early spring of 2005.

It is anticipated that the FHWA will issue the Record of Decision (ROD) in late spring of 2005. The ROD will document FHWA's final decision on a selected alternative, and, if a build alternative is selected, will document project commitments related to the selected alternative, including environmental stewardship features and mitigation measures.

# Figures

# **Appendix A**

Environmental Stewardship:  
Needs and Solutions

## **Environmental Stewardship: Needs and Solutions**

The following list is a preliminary summary of needs and solutions associated with the Environmental Stewardship features of the alternatives for the natural and human environments of Corridors 1 and 2. Each of the sub-watershed sections and planning areas are presented separately under each of the two Corridors. The number of opportunities associated with each need is noted and refers to:

- The sites identified as of this date
- Sites compiled from existing studies and agency/public input
- The total number of sites prior to preliminary site screening and ranking.

### **THE NATURAL ENVIRONMENT - CORRIDOR 1**

#### **Subwatershed: Indian Creek**

*Rationale:* Severe water quality problems leading to overall habitat degradation exist in this heavily urbanized watershed.

*Need:* Remove toxic inputs into streams

*Solution:* Cleanup of waste piles at old junkyards

*Number of Opportunities\*:* 2

*Need:* Improve stream stability and aquatic habitat conditions

*Solution:* Restore degraded and concrete-lined stream channels

*Number of Opportunities:* 2

*Need:* Reduce storm water peak flows to pre-development levels

*Solution:* Provide new or retrofit existing storm water management facilities

*Number of Opportunities:* 4

#### **Sub-watershed: Little Paint Branch**

*Rationale:* Aquatic resources have been degraded by past development practices while non-developed areas need protection.

*Need:* Reduce storm water peak flows to pre-development levels

*Solution:* Implement improved storm water management practice

*Number of Opportunities:* 1

*Need:* Improve stream stability and aquatic habitat conditions

*Solution:* Restoration of degraded and concrete-lined stream channels

*Number of Opportunities:* 3

*Need:* Increase and protect forested areas, wetlands and riparian buffer

*Solution:* Plant forest areas; establish wetland sites and riparian buffer

*Number of Opportunities:* 2

### **Sub-watershed: Paint Branch**

*Rationale:* Thermal impacts, chemical pollutants and stormwater management peak flows that affect the trout fishery are the primary concerns expressed by agencies.

*Need:* Maintain coldwater fishery in Upper Paint Branch Special Protection Area

*Solution:* Retrofit existing SWM facilities to decrease thermal loadings

*Number of Opportunities:* 5

*Need:* Decrease polluted runoff from point and non-point sources

*Solution:* Provide pollutant-specific runoff treatment

*Number of Opportunities:* 1

*Need:* Decrease negative water quality affects of impervious surface

*Solution:* Identify existing impervious surfaces that could be removed.

*Number of Opportunities:* None identified at this time.

*Need:* Reduce storm water peak flows to pre-development level

*Solution:* Implement improved storm water management practices

*Number of Opportunities:* 37

*Need:* Improve channel stability and aquatic habitat conditions

*Solution:* Implement priority stream restoration projects

*Number of Opportunities:* 19

### **Sub-watershed: Northwest Branch**

*Rationale:* Streams have experienced significant impacts as the area changes from past agriculture to urban land uses.

*Need:* Decrease sediment inputs from streambank erosion

*Solution:* Implement high priority stream restoration sites provided in DEP/USACE watershed study

*Number of Opportunities:* 60

*Need:* Reduce storm water peak flows to pre-development levels

*Solution:* Implement improved storm water management practices

*Number of Opportunities:* 44

*Need:* Remove fish blockages for resident and anadromous fish species

*Solution:* Restore fish passage using natural channel design strategies and materials

*Number of Opportunities:* 11

*Need:* Improve wildlife habitat condition

*Solution:* Creation of vernal pool habitat

*Number of Opportunities:* unknown – assumed to be numerous

*Need:* Control of invasive plant species

*Solution:* Implement invasive control projects at high priority sites

*Number of Opportunities:* unknown – assumed to be numerous

### **Sub-watershed: Rock Creek**

*Rationale:* The moderate level of development has contributed to high-quality resources that favor a watershed protection approach.

*Need:* Increase and protect forested areas, wetlands and riparian buffer

*Solution:* Plant forest areas; establish wetland sites and riparian buffers

*Number of Opportunities:* 24

*Need:* Restore resident fish passage by removing blockages

*Solution:* Restore fish passage using natural channel design strategies and materials

*Number of Opportunities:* 8

*Need:* Improve channel stability and aquatic habitat conditions

*Solution:* Implement priority stream restoration projects

*Number of Opportunities:* 24

*Need:* Improve wildlife habitat conditions

*Solution:* Provide connection between existing wildlife corridors

*Number of Opportunities:* unknown

### **Sub-watershed: Patuxent River**

*Rationale:* Watershed is not significantly affected by currently proposed alignments or options within Corridor I.

*Need:* No Environmental Stewardship measures proposed for this alternative.

## **THE NATURAL ENVIRONMENT - CORRIDOR 2**

### **Sub-watershed: Indian Creek**

*Rationale:* Severe water quality problems leading to overall habitat degradation exist in this heavily urbanized watershed.

*Need:* Remove toxic inputs into streams

*Solution:* Cleanup of waste piles at old junkyards

*Number of Opportunities:* 2

*Need:* Restoration of degraded and concrete-lined stream channels

*Solution:* Restore degraded and concrete-lined stream channels

*Number of Opportunities:* 2

*Need:* Reduce storm water peak flows to pre-development levels

*Solution:* Provide new or retrofit existing storm water management facilities

*Number of Opportunities:* 4

### **Sub-watershed: Little Paint Branch**

*Rationale:* Aquatic resources have been degraded by past development practices while non-developed areas need protection.'

*Need:* Reduce storm water peak flows to predevelopment levels

*Solution:* Implement improved storm water management practices

*Number of Opportunities:* 1

*Need:* Improve stream stability and aquatic habitat conditions

*Solution:* Restoration of degraded and concrete-lined stream channels

*Number of Opportunities:* 3

*Need:* Increase and protect forested areas, wetlands and riparian buffers

*Solution:* Plant forest areas; establish wetland sites and riparian buffers

*Number of Opportunities:* 2

### **Sub-watershed: Paint Branch**

*Rationale:* The suggested approach provides consistency with local watershed special protection strategies to reduce runoff and improve habitat.

*Need:* Maintain coldwater fishery in Upper Paint Branch Special Protection Area

*Solution:* Retrofit existing SWM facilities to decrease thermal loadings

*Number of Opportunities:* 5

*Need:* Decrease negative water quality affects of impervious surface

*Solution:* Remove impervious surfaces

*Number of Opportunities:* 0

*Need:* Reduce storm water peak flows to pre-development levels

*Solution:* Implement improved storm water management practices

*Number of Opportunities:* 37

*Need:* Improve channel stability and aquatic habitat conditions

*Solution:* Implement priority stream restoration projects



*Number of Opportunities:* 19

### **Sub-watershed: Northwest Branch**

*Rationale:* Streams have experienced significant impacts as the area changes from past agriculture to urban land uses.

*Need:* Maintain existing streams with good biotic conditions

*Solution:* Implement priority aquatic habitat improvement sites provided in DEP/USACE watershed study

*Number of Opportunities:* 20

*Need:* Increase and protect riparian buffers

*Solution:* Implement projects proposed in previous watershed study

*Number of Opportunities:* 8

*Need:* Improve wildlife habitat condition

*Solution:* Creation of vernal pool habitat

*Number of Opportunities:* unknown – assumed to be numerous

*Need:* Control of invasive plant species

*Solution:* Implement invasive species control projects at high priority sites

*Number of Opportunities:* unknown – assumed to be numerous

### **Sub-watershed: Rock Creek**

*Rationale:* The moderate level of development has contributed to high-quality resources that favor a watershed protection approach.

*Need:* Increase and protect forested areas, wetlands and riparian buffer

*Solution:* Plant forest areas; establish wetland sites and riparian buffers

*Number of Opportunities:* 24

*Need:* Restore resident fish passage by removing blockages

*Solution:* Provide fish passage restoration using natural channel design strategies and materials

*Number of Opportunities:* 8

*Need:* Improve channel stability and aquatic habitat conditions

*Solution:* Implement priority stream restoration projects

*Number of Opportunities:* 24

*Need:* Improve wildlife habitat conditions

*Solution:* Provide connection between existing wildlife corridors

*Number of Opportunities:* unknown

### **Sub-watershed: Patuxent River**

*Rationale:* Measures taken to protect the water quality of the large public water supply and retain existing protection for contributing streams is the major need.

*Need:* Protect source water quality for Rocky Gorge reservoir

*Solution:* Provide new or retrofit existing storm water management facilities

*Number of Opportunities:* unknown

*Need:* Decrease suspended sediment and nutrient inputs

*Solution:* Provide stabilization of eroding streambanks

*Number of Opportunities:* 5

*Need:* Increase and protect riparian buffers

*Solution:* Increase forested acreage within existing watershed conservation lands

*Number of Opportunities:* unknown

*Need:* Improve wildlife habitat conditions

*Solution:* Provide connection between existing wildlife corridors

*Number of Opportunities:* unknown

### **THE HUMAN ENVIRONMENT - CORRIDOR 1**

#### **Master Plan Boundary: Gaithersburg and Vicinity / Shady Grove Sector**

*Rationale:* Made up of moderately dense residential, commercial and industrial development. Community served by diverse public transportation system. Need for improved pedestrian access to transit, commercial areas, and parkland. Some areas have need for aesthetic improvements.

*Need:* Improve pedestrian/bicycle access to transit facilities, communities, and parks

*Solution:* Construct Class I –shared use paths in Shady Grove Area.

*Number of Opportunities:* 4

*Need:* Provide aesthetic improvements

*Solution:* Provide landscaping enhancements inside roadway interchanges.

*Number of Opportunities:* 2

*Need:* Improve park and recreational facilities

*Solution:* Make improvements to recreational facilities at Emory Grove Special School.

*Number of Opportunities:* 2

#### **Master Plan Boundary: Upper Rock Creek**

*Rationale:* Substantial amount of parkland throughout planning area. Strong desire from public for pedestrian/bicycle access to parks and improving local parks.

*Need:* Improve bicycle/pedestrian access to local parks.

*Solution:* Construct bicycle/pedestrian trails from existing neighborhoods to Rock Creek Park

*Number of Opportunities:* 2

*Need:* Improve park and recreational facilities.

*Solution:* Improvements to Meadowside Nature Center

*Solution:* Improvements to Rock Creek Regional Park

*Solution:* Improvements to Laytonia Recreational Park

*Number of Opportunities:* 4

*Need:* Enhance protection and preservation of historic and archeological properties

*Solution:* Conduct archeological investigations

*Number of Opportunities:* 1

### **Master Plan Boundary: Olney**

*Rationale:* Suburban residential community with distinct commercial centers. Public desire for improved bicycle/pedestrian paths. Low-medium density residential development.

*Need:* Improve pedestrian/bicycle access to community facilities and along roads

*Solution:* Connect ICC bike paths with existing trails

*Solution:* Provide bikeways south of MD 108

*Solution:* Improve pedestrian/bicycle access along MD 97

*Number of Opportunities:* 6

### **Master Plan Boundary: Aspen Hill**

*Rationale:* Predominant land use is residential. Majority of the land in the planning area is developed.

*Need:* Add pedestrian/bicycle paths along roads and connecting to parks.

*Solution:* Create Class I – Shared use path

*Solution:* Connect existing bikeways

*Need:* Enhance protection and preservation of historic and archeological properties

*Solution:* Conduct archeological investigations

*Number of Opportunities:* 1

### **Master Plan Boundary: White Oak**

*Rationale:* Planning area made up of established residential neighborhoods, local shopping, schools, public services, and recreation areas. Strong desire for intersection safety from public.

*Need:* Improve pedestrian access to transit facilities

*Solution:* Improve safe road crossing for pedestrians to transit facilities in Colesville

*Solution:* Facilitate safe pedestrian crossing of New Hampshire Avenue

*Number of Opportunities:* 2

*Need:* Enhance park and recreation facilities

*Solution:* Improvements at Martin Luther King, Jr. Recreational Park

*Number of Opportunities:* 0

### **Master Plan Boundary: Cloverly**

*Rationale:* Predominant land use is residential and parkland. Sidewalks were requested by many community members, however they are opposed by some members because they increase imperviousness levels in the Special Protection Areas.

*Need:* Increase community use of local parks

*Solution:* Improvements to parks near Good Hope Estates

*Solution:* Improve pedestrian access to local parks

*Number of Opportunities:* 3

*Need:* Improve pedestrian/bicycle access to transit facilities, communities, and parks

*Solution:* Improve intersection safety for pedestrians and bicyclists on major roads in Cloverly

*Solution:* Create Class I Path along roadways and through communities in Cloverly

*Number of Opportunities:* 6

*Need:* Provide aesthetic improvements

*Solution:* Provide streetscape improvements along MD 198 and MD 108

*Number of Opportunities:* 2

### **Master Plan Boundary: Fairland**

*Rationale:* Traffic concerns by public. Suburban community. Aesthetic improvements have been frequently requested.

*Need:* Provide aesthetic improvements

*Solution:* Provide streetscape and landscape improvements in Fairland and Burtonsville area

*Number of Opportunities:* 2

### **Master Plan Boundary: Fairland/Beltsville and Vicinity**

*Rationale:* Public requested improvements to several community centers. Parks are frequented by many in community.

*Need:* Improve pedestrian/bicycle access to transit facilities, communities, and parks

*Solution:* Add pedestrian/bicycle trails to connect Cross Creek Community with Fairland Park

*Solution:* Construct Class I –shared use paths in Fairland

*Number of Opportunities:* 4

*Need:* Improve park and recreational facilities

*Solution:* Improvements at Fairland Recreational Park

*Solution:* Improvements to the Beltsville Community Center

*Number of Opportunities:* 3

### **Master Plan Boundary: Northwestern Area**

*Rationale:* Scattered residential areas. Large areas of Open Space and Sand and Gravel operations.

*Need:* Improve bicycle/pedestrian paths in communities

*Solution:* Completion of hiker/biker/equestrian trail

*Number of Opportunities:* 1

*Need:* Improve storm drain systems in communities

*Solution:* Improve drainage at Greencastle Road /Old Gunpowder Road

*Number of Opportunities:* 1

*Need:* Improve park and recreational facilities

*Solution:* Improvements to the Fairland Regional Park and Aquatic Center

*Number of Opportunities:* 3

*Need:* Enhance protection and preservation of historic and archeological properties

*Solution:* Renovation of Historic structures

*Number of Opportunities:* 1

### **THE HUMAN ENVIRONMENT- CORRIDOR 2**

#### **Master Plan Boundary: Gaithersburg and Vicinity / Shady Grove Sector**

*Rationale:* Planning area made up of moderately dense residential, commercial and industrial development. Community served by diverse public transportation system. Need for improved pedestrian access to transit, commercial areas, and parkland. Some areas have need for aesthetic improvements.

*Need:* Improve pedestrian/bicycle access to transit facilities, communities, and parks

*Solution:* Construct Class I –shared use paths in Shady Grove Area  
*Number of Opportunities:* 4

*Need:* Provide aesthetic improvements

*Solution:* Provide landscaping enhancements inside roadway interchanges.

*Number of Opportunities:* 2

*Need:* Improve park and recreational facilities

*Solution:* Make improvements to recreational facilities at Emory Grove Special School

*Number of Opportunities:* 2

### **Master Plan Boundary: Upper Rock Creek**

*Rationale:* Substantial amount of parkland throughout planning area. Strong desire from public for pedestrian/bicycle access to parks and improving local parks.

*Need:* Improve bicycle/pedestrian access to local parks.

*Solution:* Construct bicycle/pedestrian trails from existing neighborhoods to Rock Creek Park

*Number of Opportunities:* 2

*Need:* Improvement park and recreational facilities

*Solution:* Improvements to Meadowside Nature Center

*Solution:* Improvements to Rock Creek Regional Park

*Solution:* Improvements to Laytonia Recreational Park

*Number of Opportunities:* 4

*Need:* Enhance protection and preservation of historic and archeological properties

*Solution:* Conduct archeological investigations

*Number of Opportunities:* 1

### **Master Plan Boundary: Olney**

*Rationale:* Suburban residential community with distinct commercial centers. Public desire for improved bicycle/pedestrian paths. Low-medium density residential development. Historic properties in need of renovation located in close vicinity to proposed ICC.

*Need:* Improve pedestrian/bicycle access to community facilities and along roads

*Solution:* Connect ICC bike paths with existing trails

*Solution:* Build bikeways south of MD 108

*Solution:* Improve pedestrian/bicycle access along MD 97

*Number of Opportunities:* 6

*Need:* Enhance protection and preservation of historic and archeological properties

*Solution:* Renovation of Historic structures

*Solution:* Provide roadway signage, way finding devices, and outdoor interpretive signs  
*Solution:* Increase public education and awareness of heritage resources, particularly archeological sites  
*Number of Opportunities:* 9

### **Master Plan Boundary: Cloverly**

*Rationale:* Predominant land use is residential and parkland. Sidewalks were requested by many community members, however they are opposed by some members because they increase imperviousness levels in the Special Protection Areas.

*Need:* Increase community use of local parks  
*Solution:* Improvements to parks near Good Hope Estates  
*Solution:* Improve pedestrian access to local parks  
*Number of Opportunities:* 3

*Need:* Improve pedestrian/bicycle access to transit facilities, communities, and parks  
*Solution:* Improve intersection safety for pedestrians and bicyclists on major roads in Cloverly  
*Solution:* Create Class I Path along roadways and through communities in Cloverly  
*Number of Opportunities:* 6

*Need:* Provide aesthetic improvements  
*Solution:* Provide streetscape improvements along MD 198 and MD 108  
*Number of Opportunities:* 2

*Need:* Enhance protection and preservation of historic and archeological properties  
*Solution:* Renovation of Historic structures  
*Solution:* Provide roadway signage, way finding devices, and outdoor interpretive signs.  
*Solution:* Increase public education and awareness of heritage resources, particularly archeological sites  
*Solution:* Conduct archeological investigations  
*Number of Opportunities:* 7

### **Master Plan Boundary: Fairland**

*Rationale:* Suburban community. Aesthetic improvements have been frequently requested.

*Need:* Provide aesthetic improvements  
*Solution:* Provide streetscape and landscape improvements in Fairland and Burtonsville area  
*Number of Opportunities:* 2

*Need:* Enhance protection and preservation of historic and archeological properties  
*Solution:* Renovation of Historic structures

Solution: Provide roadway signage, way finding devices, and outdoor interpretive signs. Increase public education and awareness of heritage resources, particularly archeological sites

*Number of Opportunities: 6*

### **Master Plan Boundary: Fairland/Beltsville and Vicinity**

*Rationale:* Traffic concerns by public. Suburban community.

*Need:* Improve pedestrian/bicycle access to transit facilities, communities, and parks

*Solution:* Add pedestrian/bicycle trails to connect Cross Creek Community with Fairland Park

*Solution:* Construct Class I –shared use paths in Fairland

*Number of Opportunities: 4*

*Need:* Improve park and recreational facilities

*Solution:* Improvements at Fairland Recreational Park

*Solution:* Improvements to the Beltsville Community Center

*Number of Opportunities: 3*

### **Master Plan Boundary: Northwestern Area**

*Rationale:* Scattered residential areas. Large areas of Open Space and Sand and Gravel operations

*Need:* Improve bicycle/pedestrian paths in communities

*Solution:* Completion of hiker/biker/equestrian trail

*Number of Opportunities: 1*

*Need:* Improve storm drain systems in communities

*Solution:* Improve drainage at Greencastle Road /Old Gunpowder Road. (1)

*Number of Opportunities: 1*

*Need:* Improve park and recreational facilities

*Solution:* Improvements to the Fairland Regional Park and Aquatic Center

*Number of Opportunities: 3*

*Need:* Enhance protection and preservation of historic and archeological properties

*Solution:* Renovation of Historic structures

*Number of Opportunities: 1*



# **Appendix B**

## **Travel Demand Forecasts**

## Travel Demand Forecasts

### Process

Year 2030 travel patterns for the ICC were developed using the Metropolitan Washington Council of Governments (MWCOC) Transportation Planning Board (TPB) travel forecasting model. The TPB is the designated Metropolitan Planning Organization (MPO) for the local government jurisdictions of the three-state Metropolitan Washington area.

MPOs rely on sets of computer-based mathematical travel demand models to forecast the levels of vehicular traffic that may occur if transportation improvements are implemented. The TPB's current model is designated as the "COG/TPB Travel Forecasting Model, Version 2.1/TP+ Release C." The model incorporates:

- Projected demographic and economic changes in the region, specifically the location of employment and housing,
- Characteristics of the region's transportation system, including proposed changes in transportation facilities and operating policies,
- Assumptions about the factors influencing peoples' decisions about when, where, and how they will make trips.

Future forecasts are a function of demographic and economic changes in the region, specifically the location of employment and housing, and changes in the characteristics of the region's transportation system, including proposed changes in transportation facilities and operating policies. Anticipated demographic changes and changes in the characteristics of the transportation system that are anticipated by 2030 are made to the validated 2000 computer-based mathematical travel demand model. The model is then run using these characteristics to derive future travel in the area. Following is a summary of the data used by the model for 2030.

**Highway Characteristics:** The travel demand model included highway facilities existing in 2000 plus improvements constructed between 2000 and 2003 (e.g., MD 198), and improvements included in the FY 03 Constrained Long Range Plan (CLRP). The Corridor 1 forecast also included a new arterial from the ICC to Contee Road just east of I-95. The ICC was modeled as a six-lane divided highway between I-370 and I-95 and a four-lane divided highway between I-95 and US 1, with HOVs and Express Bus Service using the same lanes as all other traffic. Since these lanes will be managed such that all traffic will be able to operate at 50 mph, a speed of 50 mph was used by the model.

For Corridor 1, grade separated interchanges between the ICC and other roads were included at I-370, Shady Grove Road, Georgia Avenue, MD 182 (as an option), New Hampshire Avenue, Columbia Pike (US 29), Briggs Chaney Road, A-59, I-95, and Virginia Manor Road. An at-grade intersection was included at US 1. Traffic forecasts for a variation of this alternative that terminated at I-95 were also prepared. For Corridor 2, grade-separated interchanges between the ICC and other roads were included at: I-370, Shady Grove Road, Georgia Avenue, MD 182, New Hampshire Avenue, Columbia Pike (US 29), Contee Road, I-95, and Virginia Manor Road. An at-grade intersection was included at US 1 for this alternative as well. Traffic forecasts for a truncated version of this alternative that stopped at I-95 were also prepared.

**Socioeconomic Data (Land Use):** 2030 Round 6.3 Cooperative forecasts, the latest socioeconomic data approved by MWCOG were used for all alternatives. These forecasts include projections of households and employment by small areas, or transportation analysis zones (TAZs) for the entire Metropolitan Washington Area.

**Tolls:** Tolls were included in the model from I-370 to US 1 with the assumption of open road tolling and no delay due to tollbooths.

**Transit:** Transit service included in the travel demand model incorporated all of the transit features in the FY03 MWCOG CLRP; plus six express routes that use the ICC and five local routes that will feed that express service. These additional transit lines could provide service that takes advantage of the ICC to provide express service between different parts of the service area. No direct ramps or transit stations were included in the model. **Table B-1** identifies the routes and the headways that were used in the model. **Figures B-1 and B-2** illustrates these routes. Express routes are designated with an E and local routes by an “L.”

**Table B-1 Additional 2030 Transit Service on ICC**

Line	Headway	Origin	Destination	Time
LA	30	South Laurel *	Rockville Metro	77
LB	30	South Laurel *	Shady Grove Metro	115
L-C	20	Briggs Chaney Rd *	Pg Plaza Metro	48
L-D	20	Laurel Center Mall	College Park Metro	68
L-E	20	Briggs Chaney Rd *	Greenbelt Metro	80
E-A	20	Shady Grove Metro	Greenbelt Metro	64
E-B	20	Shady Grove Metro	Muirkirk & S. Laurel Marc	51
E-C	30	Columbia	Shady Grove Metro	84
E-D	15	Rockville Metro	Muirkirk Marc	35
E-E	15	Burtonsville *	Greenbelt Metro	27
E-F	15	Glenmont Metro	Sg Metro - Sg Advent Hosp	39

\* Park and Ride Lot

The express routes modeled in the Corridor 1 and 2 alternatives were designed to take advantage of the high speed, free flow conditions provided by both alternatives. They use the ICC for the line-haul portion of premium cross-county and intercounty circumferential transit service. Commuters and others will be able to access this express service using existing and enhanced local transit services and park and ride facilities throughout the corridor. The service is designed to serve major employment centers as well as provide access to rail transit centers.

The express service and local feeder bus service (to be provided by others) in the model would be refined by MTA, WMATA and local transit providers once a highway alignment is chosen. A detailed transit study may result in revisions to the specified express bus service, or new service possibilities that become evident as opportunities for state, regional, and local transit agencies, local governments, and other public and private entities to refine the service.

## Projected 2030 ICC Traffic

Turning movements at the interchange along the ICC and at over 30 other intersections were developed using a hybrid method derived from the non-directional turning movement methodology outlined in NCHRP-255. The procedure utilized an iterative proportioning function (IPF) to generate turning movements. The non-directional ADT link volumes served as the input and the initial iterations were seeded with the existing turning movements for the intersection or interchange. If the intersection or interchange of interest was new, a representative intersection adjacent to the intersection was used as the seed. For each interchange along the freeway, an estimated turning percentage was calculated using the sum of the existing turning movements divided by the total inflow volumes. This was used in conjunction with the refined approach link volumes to develop daily turning movements.

For design and analysis purposes, peak hour traffic projections are derived from the refined ADT volumes. The peak hour projections represent average weekday traffic forecasts for both the morning and evening peak hours. Peak hour ramp volume projections are calculated based on modifications made to existing peak to daily percentages. For a new facility such as the ICC, adjacent competing facilities were used to estimate the directional peak to daily percentages. These modifications were made by multiplying the existing percentage by a factor developed to reflect the impact of peak period spreading. Once the freeway system peak hour projections are calculated, the peak to daily percentages for other roads are developed based on existing travel patterns, the freeway forecast, and turning movement forecast.

Projected 2030 average weekday traffic (AWDT) for the ICC is provided in **Table B-2**. Projections are provided for two alternatives: Corridor 1 and Corridor 2 between I-270 and I-95/US 1. All of the ICC segments for both alternatives are projected to serve over 90,000 vehicles per day and most over 100,000 vehicles per day. Only a few roads in Maryland currently accommodate traffic of this magnitude. I-795 in the Baltimore area currently serves as much traffic as what is projected for the ICC. This demonstrates the significant latent demand for the ICC.

**Table B-2**  
**Projected 2030 Average Weekday Traffic**

Segment		Average Weekday Volume (Vehicles Per Day)	
From	To	Corridor 1	Corridor 2
I-370	MD97	124,000	124,000
MD97	MD 650	115,000	104,000
MD 650	US 29	105,000	95,000
US 29	Briggs Chaney Rd.	124,000	N/A

Segment		Average Weekday Volume (Vehicles Per Day)	
From	To	Corridor 1	Corridor 2
Briggs Chaney Rd.	A-59	124,000	N/A
A-59	I-95	111,000	N/A
US 29	Contee Rd	N/A	112,000
Contee Rd.	I-95	N/A	109,000
I-95	Virginia Manor Rd	115,000	113,000
Virginia Manor Rd	US 1	94,000	92,000